

## Trends and Patterns of Urbanisation and Migration in Jammu and Kashmir

**Dr. Shashank Shekhar Thakur**

Associate Professor, Department of Sociology and Social Work, Barkatullah University Bhopal, M.P, India

**Parvaz Ahmad Khan**

Research Scholar, Department of Sociology, Barkatullah University Bhopal, M.P, India

**Abstract** :- Urbanization is a form of social transformation from traditional rural societies to modern urban communities, migration being its major factor. In fact, the processes of urbanization & migration are highly positively correlated. This paper tries to examine and analyze the trend and pattern of urbanization vis-à-vis migration, with particular reference to the state of Jammu and Kashmir. The analysis shows that there is the great intra-district variation of urbanization in Jammu and Kashmir. The trend of urbanization in this Himalayan state is indicative of the concentration of resources and opportunities in a few larger towns only. The future population and economic growth are likely to concentrate in and around these few major towns, especially Srinagar and Jammu. It is further observed that the demographic trends of urbanization are accompanied by the change in management and financing of urban development as a result of liberalization. The migration data also shows that the movement of people is area specific. There are only a few areas which are attracting people from various districts. The trend of various streams is highly changing as R-R & R-U streams are showing an increasing trend. With the growing level of urbanization, the challenge of up gradation of urban infrastructure and improvement of urban environment will pose a major challenge for Jammu & Kashmir. The disparities between infrastructure and services of the rural and urban areas should not be allowed to widen in future in this ecologically sensitive state. This demands acceleration of development process for overall improvement of infrastructure services and quality of life in rural as well as in urban areas. The study ends with a note that there is the need of concrete policies and programmes to check the changing

scenario of urbanization & migration in Jammu & Kashmir.

**Keyword** :- Urbanization, challenge, migration, quality of life, census, transformation.

**Introduction** :- Urbanization is a form of social transformation from traditional rural societies to modern urban communities. It is long term continuous process. The study of urbanisation highlights that the process of urbanisation in India dates back as about five thousand years when Indus Valley Civilization saw the birth of the earliest urban settlement in human history. Urbanization is a Progressive concentration of population in the urban unit (Kingsley Davis-1965). These changes manifest themselves in the increasing concentration of population in human settlements, larger than villages, in the increasing involvement of the people in the secondary and tertiary production functions, and in the progressive adoption of certain social traits which are typical of traditional rural societies". Urbanization is not only accompanied to industrialization, but it is also interlinked with modernization and these three sometimes work in conjunction. In the countries of the third world, urbanization has not been accompanied by modernization as well as industrialization, i.e. a case of pseudo-urbanization 'or over-urbanization'. In most of the developing countries, the modern process of urbanization is a recent phenomenon, and it is still unfolding. As this process is still unfolding in the developing countries, it is revealing special features. The study of different aspects of urbanization is very important in order to have a proper understanding of the urbanization and migration phenomena as well as policies to deal with it. Census of India

defines Migration as a person who has moved from one politically defined area to another similar area. In the Indian context, these areas are generally a village in rural and a town in urban. Thus, a person who moves from one area to another is termed as a migrant provided his/her movement is not of purely temporary nature on account of casual leave, visits, tours, etc. Migration is a form of mobility in which people change their residential location across defined administrative boundaries for a variety of reasons, which may be involuntary or voluntary, or a mixture of both. Amitabh Kundu in his article has highlighted the role of migration and urbanization in the growth of the economy. Migration and urbanization are direct manifestations of the process of economic development in space, particularly in the contemporary phase of globalization.

Urbanization in Jammu and Kashmir has been defined differently by different geographers and social scientists.

The basis of their definition include:

- (1) Demographic attributes, or
- (2) Structural changes, or
- (3) Behavioural changes.

If we look at the phenomenon from the demographic point of view, then urbanization is a situation where in an increase in the proportion of the urban population to that of the total population over a period of time. One the other hand that is from the structural point of view Urbanization means more concentration of secondary, tertiary and quaternary activities leading to increase in productivity and industrialization. Now turning to the behavioural aspect. It is a process leading to the change in the attitudes, values, characterized with large population, high density and heterogeneity of its inhabitants. It is widely held fact that urbanization is one of the characteristics of economically advancing nations and it is closely linked with industrialization. Urbanization has a long history, originating during the Neolithic period (New Stone Age) when man started the domestication of

plants around 10, 000 years before present. The civilization of plants enabled men to change their economy, to produce food and to live in permanent settlements.

Urbanization started in the Nile Valley (Egypt), Mesopotamia, Indus Valley, Hwang Ho Valley and central America around 6000B.C. The urban centres of Mohenjo-Daro and Harappa may be cited as examples of prehistoric urbanization in the Indian subcontinent. In Kashmir, the sites like Narang (Wangat Vally), Aishmuqam, and Awantipora are the testimony of some of the old urban centres.

**Defining 'Urban' :-** No statistical study of urbanization is possible unless adequate note is taken of the definition of an urban area, or city or town which varies from country to country and from one census to another. In Greenland (Denmark), for example, a place with 300 or more inhabitants is called an urban area, in Canada all the settlement with more than 1000 people are called urban, while in the Republic Korea, an urban area must have at least 40,000 inhabitants.

In India the census definition of 'urban town' remained more or less the same over the period 1901-51. It was in 1961 that several modifications were introduced to make the definition more satisfying from the statistical point of view.

In census of 1991, the urban settlements have been defined on the basis of the following criteria:

1. All places with a municipality, corporation, cantonment-board, or notified town area committee, etc.
2. All other places which satisfy the following criteria:
  - (i) A minimum population of 5000;
  - (ii) At least 75 per cent of male working population engaged in non-agricultural pursuits; and
  - (iii) A density of population of least 400 persons

per sq. km. In addition, the marginal cases such as project colonies, areas of intensive industrial development, railway colonies, tourist centres, etc., come under the category of 'urban'.

In order to make the international data comparable, the United Nations (1958) suggested that the data on urban population should also be presented according to the standard scale. Consequently, many of the countries have further classified their urban settlements on the basis population size into a number of categories.

Keeping this in mind, the census of India classified the urban places into the following six categories:

- Class I, those having a population of 100,000 or more,
- Class II, those having a population between 50,000 and 99,999;
- Class III, those having a population between 20,000 and 49,999;
- Class IV, those having a population between 10,000 and 19,999;
- Class V, those having a population between 5,000 and 9,999, and
- Class VI, those having a population below 5,000

The change of urban population from 1981-2001 is found very high in Leh (Ladakh) where it has increased from 3 percent to 21.53 percent. However, there are 75 towns in J&K in 2001. Towns like Srinagar & Jammu have class I population while there are 5 class II Towns, 6 class III towns, 21 class IV towns, 20 class V towns and 19 class VI towns. There is a great variation in the urban population across its districts. This kind of class division of towns is a clear indication of uneven urban development in Jammu and Kashmir. If this kind of uneven development of urban areas continues then, the state will have to face various socio-economic and cultural repercussions in general and the ecological degradation in particular.

**Migration** :- Migration is one of the most important components of population change. The study of migration occupies an important place in population studies, because, in combination with fertility and mortality, it determines the size and the rate of population growth, as well as, its structure and characteristics. Migration also plays an important role in the distribution of the population of any country and determines the growth of the labour force in any area. The measurement and analysis of migration are useful in preparing regional population projections. The study of migration is useful not only to demographers but is also of great importance and interest to economists, sociologists, human geographers, political scientists, legal departments, policy makers and planners. People working in various fields are interested in the study of migration because migration may be considered as a symptom of basic change. In most countries, it has been observed that industrialization and economic development have been accompanied by large-scale movements of people from farm areas to towns, from towns to another town, and from one country to another. For example, countries in Asia, Africa, and Latin America, which are at present undergoing technological changes, are experiencing some sort of migration from rural to urban areas, and these streams of migration have given rise to metropolitan cities.

**Streams & Categories of Migration** :- The streams of migration are found at national, regional and local level but with different kind of variations. The major streams of migrations identified in the study area are Rural-Rural, Rural Urban, Urban-Rural and Urban-Urban. These streams have been analysed at intrastate, intra district, interstate, and inter-district level.

The study of streams of migration in Jammu and Kashmir reveals interesting results at various levels. However, the internal migration at state level shows a change of 89.07 percent occurred from 1981-2001, where the change is high in females than males mainly due to their

migration at the time of marriage. The Rural-Rural stream shows an alarming change of 60.50 percent. However, the change in this stream is very high in males (98.62%) as compared to females (53.36%). The rural-urban stream shows an increasing trend where the huge male population is migrating from rural to urban areas in search of better livelihood and employment opportunities. However, the Urban-Rural stream is showing negative signs in population change and the migration of males. However, the migration of females from urban to rural areas shows a positive change. This positive change is mainly due to the migration of female at the time of marriage. However, the urban-urban stream shows a positive change and this change is high in females than the males in the case of urban-urban migration. At the intra-state level, the Rural-Rural stream shows an increase in population by 58.68 percent. However, this change is very high in female population (111.24 percent) as compared to the males (-23.96 percent). On the other hand, the Rural-Urban stream showed an overall increase of 16.60 percent. The Urban-Rural stream shows an increase of 14.90 percent. However, the increase is high in females as compared to males from 1981-2001. The urban-urban stream shows a declining trend. At the intra-district level, the Rural-Rural stream of migration shows an increase in population. The change shows 40.28 percent increase in total population. While, the Rural-Urban stream shows an increase of 48.98 percent in total population. The Urban-Rural stream shows a slight increase of 1.81 percent. However, the Urban-Urban stream shows an increase of 7.76 percent. The inter-district level data shows that the Rural-Rural stream of migration has increased by 10.08 percent from 1981-2001. However, this stream shows a negative trend in male population while it is encouraging to the female population. The Rural-Urban stream shows an increasing trend. However, the Urban-Rural streams, as well as Urban-Urban stream, shows a declining trend. While at Interstate level, the Rural-Rural stream of migration shows an increase of 7.36 percent. This stream shows a favourable trend towards males as compared to females. This is because males

migrate to other states in search of employment opportunities while the movement of women is restricted. The Rural-Urban migration has also increased by 38.24 percent. The Urban-Rural stream & Urban-Urban stream has also increased by 13.83 per cent and 45.26 per cent respectively. In both the streams, the trend is in favour of the male. This is clear from the above analysis that migration from rural to rural areas is predominated by females due to their migration at the time of marriage. Secondly, the rural to urban migration is dominated by males in search of their better livelihood and employment opportunities.

The migration matrix of Jammu & Kashmir (2001) shows that the large numbers of people are migrating to the Jammu from the districts of Jammu and Kashmir. Srinagar has the largest number of out-migrants to Jammu (46721). The data also shows that large numbers of people are moving out from the Jammu (34211). While the data of in migrants shows more and more migrants are moving to Jammu (134436), kathua (24132), Srinagar (21829). The migration data of inter-district shows people from each district are moving more in number towards Jammu. The political situation in the Kashmir valley and the lack of development push the people to move towards areas having stability and opportunities. The capital of the state is Srinagar in summer & Jammu in winter, so more and more people during the winters are moving towards Jammu along with Durbar move. The entire administration, as well as the common people, moves to Jammu as the climate in Jammu during winters is cool and warm, so it acts as a gravity tool to attract people from one capital to another and vice versa.

**Conclusion :-** As Indian cities continue to swell, the challenge of improving the urban infrastructure will be magnified' (planning commission, 2002). With the growing level of urbanisation, the challenge of up gradation of urban infrastructure and improvement of urban environment will be a major challenge for Jammu & Kashmir. The disparities between infrastructure and services of the rural and urban areas should not be allowed to widen in future in this ecologically sensitive

Himalayan state. This demands acceleration of development process for overall improvement of infrastructure services and quality of life in rural as well as in urban areas. The trend of urbanization in the study area is indicative of the concentration of population and resources in a few larger towns only. The future population and economic growth are likely to concentrate in and around these major towns. The demographic trends towards urbanisation are accompanied by the change in management and financing of urban development as a result of liberalisation. The migration data also shows that movement of people is the area specific. There are only a few areas which are attracting people from various districts. The trend of various streams is changing highly. The R-R & R-U streams are showing an increasing trend. Thus, various policies and programmes should be made to check the changing scenario of urbanisation in general and migration in particular in Jammu & Kashmir.

**References :-**

- (I) Kundu, Amitabh: Migration and Urbanisation in India in the Context of Poverty Alleviation, economic & political weekly, vol ix, 2010.
- II) Forbes, D. and Lindfield, M. (1997): Urbanisation in Asia: Lessons Learned and Innovative Responses, AusAid, Canberra
- III) The government of India (1988): "Report of the National Commission on Urbanisation", Government of India, New Delhi.
- IV) Sivaramkrishnan, K. C., A. Kundu, and B. N. Singh (2005). A Handbook of Urbanization, Oxford University Press, New Delhi.
- V) Premi, M. K. (1985). 'City Characteristics, Migration, and Urban Development Policies in India, Paper no 92, East West Centre, Honolulu.
- VI) Todaro, M. (1969). "A Model of Labour, Migration and Urban Unemployment in less Developed Countries". American Economic Review, 59:138-148.

## Labour Welfare and its important Elements : A synoptic View

Deepa Kumari

Research Scholar, Faculty of Management, Magadh University, Bodh Gaya (Bihar)

Labour Welfare is a broad concept. Rather it is dynamic and its coverage may be widening with improvement in the economic status of the country. So, the Royal Commission on labour in India has emphasized that the concept of labour-welfare must be elastic. This concept, to quote the Commission's Report, "must necessarily be elastic bearing a somewhat different interpretation in one country from another according to the different social customs, the degree of industrialisation and the educational development of the worker." Now different interpretations have been given to the term labour welfare. According to Proud, welfare work refers to "the efforts on the part of employers to improve within the existing industrial system, the conditions of employment in their own factories." Prof. Richardson defines it in such a way as to include, "any arrangement to working conditions, organisation of social and sports club and establishment of funds by a firm, which contribute to the worker's health and safety, comfort, efficiency, economic security, education and recreation. Sri A.M. Joshi has formulated a quite broad definition for the term labour Welfare. He says, "The welfare work covers all the efforts which the employers make for the benefit of their employees over and above the minimum standard of working conditions fixed by the factory act, and over and above the provisions of the social legislations providing against accident, old ages, unemployment and sickness." Definition of labour welfare as given in the Report of the I.L.O. is as follows, "Workers welfare should be understood as meaning such services, facilities and amenities which may be established in or in the vicinity of undertaking to enable the persons employed in them to perform their work in healthy congenial surrounding and provided with amenities conducive to good health and high marale."

Now, while defining the term labour welfare, the element of 'elasticity' must always be kept in mind. The structure of the society is prone to change and consequently welfare facilities are to be adjusted to the changing circumstances. Thus, Paul Chu has remarked, "Welfare services are as varied as life itself and are constantly being adapted to new circumstances. They form a fluid and developing pattern which changes as human needs change, as problems of adjustment to social environment arise or with the changes which are perpetually going on the structure of society itself.

**Some elements of Labour Welfare :-** The term labour welfare is very comprehensive and embraces a multiplicity of activities such as working conditions, educational and recreational facilities, sanitation and health, housing etc. which help increasing productive efficiency of labour. In the western countries, labour welfare, also sometimes termed as 'employee services', is held to comprise services basically of three types : Economic (e.g. pensions, insurance, health and accident services), Recreational and Facilitative (e.g., medical services, housing, cafeteria, legal and financial counselling, education and library services). In India the Labour Investigation Committee has gone to the extent to include under labour welfare activities, anything done for the intellectual, physical, moral and economic betterment of workers by any agency. However, the committee has focused light on some major items of labour welfare. According to the Committee, labour welfare includes, "housing, medical and educational facilities, nutrition (including provision of canteen), facilities for rest and recreation, co-operative societies, day nurseries and creches, provision of sanitary, accommodation, holidays with pay, social insurance measures undertaken voluntarily by employers alone or joint with workers, including

sickness and maternity benefit schemes, provident fund, gratuities and pensions etc.”

**Industrial Housing** :- Among the basic minimum necessities of life, the place of housing is next only to food and cloth. So, the provision of adequate housing facilities occupies the central role among welfare amenities. The International Labour Organisation has emphasized that, “Employers should recognise the importance to them of the provision of housing for their workers on an equitable basis by public agencies or by autonomous private agencies such as co-operative or other housing associations separate from the employers ‘enterprises’. For improvement in efficiency, growth in civic sense and stability of industrial relations, industrial housing is a necessary adjunct. To quote R.K. Mukherjee, “The problem of housing is undeniably the most central for efficiency and well-being of the Indian working class.” The I.L.O. in its Report entitled ‘Housing and Employment’ has mentioned that improvement in housing is essential for an increase in the standard of living. Better housing insures good health, moral welfare, efficiency and aesthetic look. With growing urbanisation and industrialisation, the problem of housing would be more difficult, Hence, this basic item of labour welfare must be provided in an optimum way.

**Industrial Health** :- Industrial health is comparatively a new system of ‘public health’. Industrial health as such comprises measures for

- (a) protecting the workers against any health hazard which may arise out of their work or the conditions in which it is carried on,
- (b) contributing towards the worker's physical and mental adjustment in particular by the adaptation of workers to the jobs for which they are suited, and
- (c) contributing to the establishment and maintenance of the highest possible degree of physical well-being of the workers.

Now, there are two important aspects of protection, viz. preventive and curative—which

should be provided against the health hazards. Preventive measures for protection of industrial health consist of pre-employment and periodical medical examination of all employees, removal of health hazards as far as possible, emergency treatment for accident, training of first-aid personnel, systematic attention of sanitation, safety precautions and industrial hygiene, education of worker's in health and provision of competent medical consulting staff. The curative side comes into the picture when worker suffers due to ill health.

While discussing industrial health, it must be mentioned that there is a growing need for health insurance of the workers. Worker's life happens to be exposed to many risks and diseases and the incidence of some hard diseases and fatal accidents is extremely acute which the individual in isolation is unable to bear. The risk must be transferred from the individual to the community to which he belongs. Occupational diseases are growing in number and therefore the changing character of health and hazards necessitates a continuous study of new problems and adaptation of the remedial measures suitable to fast changing environments in the industry.

**Transport Facilities** :- Provision of adequate transport facilities is necessary not only for minimising the trouble of the workers, but also for reducing the time spent in travelling between their quarters and the place of the work. The International Labour Organisation has recommended, “Where adequate and practicable transport facilities for the workers are necessary and cannot be provided in any other way, the undertaking in which they are employed should themselves provide the transport.” The need of transport facilities is more acutely felt when the plants are located at distance from the residential area, a hard fact that is observed in case of many public sector enterprises in India.

**Recreational Facilities** :- Sports and games, cultural programmes and recreational facilities are essential to sooth the fatigued organs of the

workers. Labour being a living factor of production, its contributions to the goals of the enterprise can be better assured by control over fatigue and tension. Continuous company of the machine and association with technical process lead to growth in monotony—which in its turn leads to many adverse effects. For such harmful consequences, recreational facilities may serve the very purpose of 'industrial medicines'. Moreover, these facilities are helpful in protecting the workers from being victim of many bad habits which they may develop. It is earnestly felt that without arranging proper facilities for recreation, it would be a difficult task to protect the workers from the ill practices of drinking and prostitution etc. So, welfare measures in the form of the means of recreation help to raise employee's morale.

**Education** :- Education is an important welfare measure for the development of the workers. Bowley and Schriver have correctly remarked, "Employees on a personal basis gain individually from their exposure to educational experiences." Industrial organisation itself is immensely benefited by the growth of employees, facilitated through the means of education. To quote Boocock, "Better informed workers are less likely to make operational mistake. Quality increases may be in relationship to a company product or service or inreference to the intangible organisational employment atmosphere." Worker's education is still more necessary in a less developed country where labour is acquired from the primary occupations and the workers are generally illiterate and least educated. Lack of education is a major constraint on the optimum realisation of their growth potentialities. To remove this lacunna, educational 'bottlenecks' must be removed. Besides educating the workers, it is imperative that there should be adequate educational facilities for the children of the employees.

In addition to the aforementioned measures, provision of canteen, co-operative societies, maternity benefit schemes, staff benefit fund etc. are important aspects of labour welfare.

The more properly they are dressed, the more enlightened will be the scope for improvement in employee's morale, labour management relationship and productive efficiency of the enterprise. They are rather basic elements in the field of labour management and they must be adjusted according to the changing situations of the industrial life.

#### References :-

- Sidney, H.A. : Social Security and Related Welfare Programme.  
Lokanathan, P.S. : Industrial Welfare in India.  
Kether, D.P. : India's Labour Welfare.  
Mehrotra, S.N. : Labour Problems in India.  
N.C.L. Report, 1969.



## A Study of the Problem and its Elaboration of Education in India

**Poonam Vipul Mishra**

Research Scholar, Rani Durgawati University, Jabalpur (M.P.)

**Introduction :-** Education is a systematic process through which a child or an adult acquires knowledge, experience, skill and sound attitude.

It makes an individual civilized, refined, cultured and educated. For a civilized and socialized society, education is the only means. Its goal is to make an individual perfect. Every society gives importance to education because it is a panacea for all evils. It is the key to solve the various problems of life.

**Education has been described as a Process of Waking Up to Life :-**

- Waking up to life and its mysteries, its solvable problems and the ways to solve the problems and the ways to solve the problems and celebrate the mysteries of life.
- Education in the broadest sense of the term is meant to aid the human being in his/her pursuit of wholeness. Wholeness implies the harmonious development of all potentialities god has given to a human person.
- True education is the harmonious development of the physical, mental, moral (spiritual) and social faculties, the four dimensions of life of dedicated service.

**Definitions :-** Since time immemorial, education is estimated as the right road to progress and prosperity. Different educationists' thoughts from both eastern and western side have explained the term 'education' according to the need of hour. Various educationists have given their views on education.

**Some Important Definitions :-** "By education I mean an all-round drawing out of the best in man – body, mind and spirit".

- Mahatma Gandhi

"Education is the manifestation of divine perfection already existed in man".

-Swami Vivekananda

"Education is the creation of a sound mind in a sound body. – Aristotle

"Plant is developed by cultivation and men by education. - John Locke

This world would have been enveloped in intellectual darkness if it had not been illuminated by the light of education. It is right to say that the story of civilization is the story of education. Thus education is an integral part of human life. It is the basic condition for a development of the whole man and vital instrument for accelerating the well being and prosperity by the light of education.

**Aims of Education :-** Aims give direction to activities. Aims of education are formulated keeping in view the need of situation. Human nature is multisided with multiple needs, which are related to life. Educational aims are correlated to ideals of life.

The goal of education should be the full flowering of the human on this earth. According to UNESCO study, "The physical, intellectual, emotional and ethical integration of the individual into a complete man/woman is the fundamental aim of education".

The goal of education is also to form children into human persons committed to work for the creation of human communities of love, fellowship, freedom justice and harmony. Students are to be molded only by making them experience the significance of these values in the school itself. Teachers could achieve this only by the lived example of their lives manifested in hundreds of small and big transaction with students in word and deed.

**Individual and Social Aims :-** Individual and social aims are the most important aims of education. They are opposed to each other. Individual gives importance for the development of the individuality. Social aim gives importance to the development of society through individual not fulfilling his desire.

Education should give scope to develop the inborn potentialities through maximum freedom.

Psychologist behave that education is an individual process because of individual differences. No two individuals are alike. So education should be according to the interest of the individual.

Some educationists believe that society or state in supreme or real. The individual is only a means. The progress of the society is the aims of education. Education is for the society and of the society. The function of education is for the welfare of the state. The state will make the individual as it desires.

It prepares the individual to play different roles in society. Individuality has no value from and personality is meaningless apart from society. If society will develop individual will develop automatically.

**Synthesis Between Individual and Social Aims of Education :-** Individual aim and social aim of education go independently. Both are opposing to each other. It is not reality. Neither the individual nor the society can exist. The individual is the product of the society while society finds its advancement is the development of its individual member.

“The aim of education is the development of development of valuable personality and spiritual individuality”. The true aim of education cannot be other then the highest development of the individuality as a member of society. Let the education burn the individual flame, feeding it with the oil of society. - James Ross

**Sociology of Education in India :-**

**Education :** A path to social development.

**Socialization :** A process by which individual

acquires social competence by learning the norm, values beliefs, attitude, language characteristic and roles appropriate to their social group. Education plays a large part in the socialization of children into society.

Education is a social science that encompasses teaching and learning specific skills. Practicing teachers in the field of education use a variety of methods and materials in their instruction to import a curriculum. These have been a plethora of literature in the field of education that addresses these areas. Such literature addresses the facts of teaching practices to include instructional strategies, behavior management, environmental control, motivational strategies and technical logical resources. However, the single most important factors in any teacher effectiveness are the interaction style and personality of the teacher, for the quality of their relationship with the student provides the impetus for inspiration. The goal of education is the growth of students so that they become productive citizen of the dynamic, ever changing, society.

**Education and Social Theory :-**

**The function of education :** The manifest function of education is the transmission of knowledge to student in order to help them contribute back to society either as knowledge producers themselves (scientists) or in other ways, like a business or industry. However, education also has a latent function and it is a function that is actually quite important when it come to financial out comes. One of the latent functions of a mass educational system is to faster social skills. And, it turns out those social skills literally pay-off in the long run. Students who score high on measures of sociability earn more money and get more education than equally intellectual gifted student who don't score high in social skills.

**Challenges in Education :-** The goal of education is the transference of ideas and skill from one person to another or from one person to a group. Current education issues include which teaching methods are effective, how to determine what knowledge should be taught, which knowledge is most

relevant, and how well the pupil will retain incoming knowledge. Education such as George count and Paula freire identified education as an inherently political process with inherently political outcomes. The challenge of identifying whose ideas are transferred and what goals they had always stood in the face of formal and informal education.

The current education system measures competency with tests and assignments and then assigns each students a corresponding grade. The grades usually comes in the form of either a letter grade or a percent age, which are intended to represent the amount of all material presented in class that the student understood.

Educational progressiveness or advocates of unsholling often believe that grade do not necessarily reveal the strengths and weakness of a student and that there is an unfortunate lack of youth voice in the educative process. Some feel the current grading system risks lowering student self-confidence, as student may receive poor marks due to factor outside their control. Such factors include poverty, child abuse and prejudiced or incompetent teachers.

By contrast, many advocates of a more traditional or "back to basics" approach believe that the directions of reforms needs to be quite opposite. Student are not sufficiently inspired or challenged to achieve success because of dumping down of the curriculum and the replacement of the "canon" with inferior material. Their views of self-confidence is that it arise not from removing the hurdles such as grading, but by making them fair and encouraging students to gain pride from knowing they can jump over these hurdles.

On the one hand, Albert Einstien, one of the most famous physicists of our time, credited with helping us understand the universe better, was not a model school student. He was uninterested in what was being taught, and he did not attend the class all the time. However his gifts eventually show through and added to the sum of human knowledge. On the other hand, for millennia those who have been challenged and well-educated in traditional schools have risen to great success and to a lifelong love of learning

because their mind were made better and more powerful as well as because of their mastery of a wide range of skill.

There are a number of highly controversial issues in education should some knowledge be forgotten? What should be taught, are we better of knowing how to build nuclear bombs, or is it best to let such knowledge be forgotten?

While our informal assessments of personality tends to focus more on individuals, personality psychologists instead use conception of personality that can apply to everyone. Personality research has led to the development of a number of theories that help explain how and why certain personality traits develop.

Personality is the collection of characteristics thoughts, feeling and behavior that are associated with a person. Personality development is an improvement in all spheres of an individual life, be it with friends, in office or in any other environment. The progress in and instances on quality of education coupled with rapid strides in spread of knowledge call for equally developed and able recipient. Thus a definite need is felt for well-developed personality and character in our life.

#### **Education for Sustainable Development (ESD) :-**

Education for sustainable development allows every human being to acquire the knowledge, skills attitudes and values necessary to shape the sustainable future.

Education for sustainable development means including key sustainable development issues into teaching and learning for example, climate change, disaster risk reduction, biodiversity, poverty reduction and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development. Education for sustainable development consequently promotes competences like critical thinking, imagining future scenarios and making decision in collaborative way.

Education for sustainable development

require for reaching changes in the way education in often practiced today.

UNESCO is the lead agency for the UN decade of education for sustainable development. (2005-2014)

The areas of Dimensional Personality Inventory are described as below—

- **Activity-Passivity Trait** : The person is active, energetic, enthusiastic, regular, persistent and busy with ability to concentrate for long duration of time, on the one hand and passive, dull, inactive, slow and irregular in working, deviation with constructive output, delayed reactions in work, unwillingness to act on the other hand. Higher score on this dimension shows Activity trait of one's personality whereas lower score tends the passiveness of an individual.
- **Enthusiastic and Non-Enthusiastic Trait** : It indicates the tendency to be happy go lucky, warm hearted person, enjoying life, fond of being in company of others, social and outgoing, mixing easily in the company of others, witty, loves enthusiastic and courageous work, open hearted, ability to move persons for various functions. This is indicated by the cyclothymic temperament and higher score indicates the greater tendency. On the other hand lower score indicates non-enthusiastic trend by expressing reservedness, shyness, inhibited, cold, keeping aloof, feeling difficulty to contact other people, slow spoken, non-participation of various functions and also known as schizothymic personality.
- **Assertive-Submissive** : It indicates the assertiveness of an individual as person is straight forward in all dealing of life, bold, having traits of leadership, likes to act as a main role palyer, independent nature, non convincing with other's ideas, dominant, whereas submissiveness keeps his ideas to himself only, not dare to open his mouth, fearful to meet and exchange views with others, accept subordination and act as others say, hesitant to oppose other's views. High score indicates the assertiveness trait of personality, whereas low

score is near to submissiveness dimension.

- **Suspicious-Trusting** : High score shows the paranoid tendency of the individual which is reflected in his suspicious nature about others, apprehensive, having no faith on others, blaming others for his all failures and non achievement, feeling misconception of people about himself and feels that others are jealous of him and want to harm him, whereas low score tends to trusting trait of personality which do not have any such paranoid tendency. This positive dimension of personality is characterized by free of jealous tendencies, accepting conditions, easy to get on with others, adaptable, cheerful, uncompetitive, a good team worker, an open and tolerant person and usually willing to take a chance with people, realizing own weaknesses and faults.
- **Depressive-Non-Depressive** : High score on this personality trait indicates feeling of helplessness, hopelessness, worthlessness, depressed, unwanted, unloved, suicidal ideas, feeling of inferiority, highly frustrated, lack of self confidence, sad on misdeeds and mistakes done in the past, jealous about others happiness, restless and full of tense. Whereas low score tends to be non-depressive characterized by relaxedness, unfrustrate. d, composed and satisfied.
- **Emotional Instability and Emotional Stability** : The high score on this personality trait indicates emotional instability where individual is affected by feelings, emotionally less stable, easily annoyed and upset having low frustration tolerance for unsatisfactory conditions, highly anxious and worrying, fearful, sensitive, touchy, given to mood swings, depressed and sad whenever confronted with stressful situations, having neurotic symptoms like phobias, sleep disturbances and psychotic disorders. The low core is indicative of emotionally stable trait of the personality where person is with full control over his emotional expressions, emotionally mature, stable, realistic about life situations, possessing ego strength, high level of adjustment with unsolved emotional problems.

**Data Analysis And Interpretation :-**

In the present Investigation, researcher has selected stratified random sampling and the

sample for the study has been taking from the schools shown is table 1 selection of student from above school has been shown in table 2

**Table No. 1**  
**Sampling of Students of the Basis of Nature of School**

Board	Nature of School	Boys	Girls	Total
CBSE	Government	60	60	120
	Private	60	60	120
M.P. Board	Government	60	60	120
	Private	60	60	120
Total		240	240	480

**Table No. 2**  
**Sampling of School**

Board	Government	Private	Total
CBSE	2	2	4
MP Board	2	2	4
Total	4	4	8

**Table No. 3**  
**Comparative results of gender difference in Occupation Aspiration of students in relation to Medium of Instruction**

School	Medium	Activity-Passivity	Gender	N	M	S.D.	C.R.	'P' Value
Government	Hindi	High	Boys	67	49.49	10.37	1.30	>0.05
			Girls	63	47.24	9.33		
		Low	Boys	58	50.33	10.63	0.33	>0.05
			Girls	67	49.79	6.54		
Private	Hindi	High	Boys	71	56.20	6.12	0.64	>0.05
			Girls	62	55.32	9.04		
		Low	Boys	66	55.98	6.52	0.57	>0.05
			Girls	65	56.74	8.40		
Government	English	High	Boys	57	52.23	9.64	1.76	>0.05
			Girls	69	55.04	7.98		
		Low	Boys	59	52.02	9.75	3.04	<0.01
			Girls	54	56.43	5.18		
Private	English	High	Boys	47	53.83	6.29	0.89	>0.05
			Girls	64	52.34	11.15		
		Low	Boys	75	53.92	6.16	3.66	<0.01
			Girls	56	48.27	10.24		

Degree of freedom – 128, 123, 129, 124, 131

Degree of freedom – 109, 111

value at 0.01 level – 2.60

Minimum value at 0.05 level – 1.98

Minimum value at 0.01 level – 2.62

Minimum value at 0.05 level – 1.97

Minimum

The result of gender difference in Occupational Aspiration of government and private school, Hindi and English medium in relation to Activity-Passivity Trait show that statistically there is no significant difference in Activity-Passivity Trait of boys and girls of government and private Hindi and English school, as the value of CR are 1.30, 0.33, 0.64, 0.57, 1.76, 0.89 which are less than minimum value of significance at 0.05 level. Hence there is no impact of gender difference in Occupational Aspiration of boys and girls government and private Hindi and English medium school.

There appears to be a significant difference in value of low Activity-Passivity of boys and girls of English medium private school and English Government School, the value of CR is 3.04 and 3.65 which is greater than minimum value of significance at 0.01 level.

Hence it is concluded that there is a partial impact of gender difference in Occupational Aspiration, in relation to Activity-Passivity Trait of boys and girls of government and private Hindi and English medium school.

**Sample** :- Due to practical limitations e.g. cost, time in the study of total population, research work can undertaken with use of sampling. Sampling is that part of statistical practice concerned with the selection of individuals observation intended to yield some knowledge about a population of concern, especially for the purpose of statistical inference, sampling means selection of individuals from the population in such a way that every individuals has equal chance to be taken into the sample.

A good sample is the true representatives of the population and free from bias. It is also economical from energy, time and money point of view. In research work, generalization is made by estimating parameters on the basis of sample statistics.

“In the social sciences, it is not possible to collect data from every respondent relevant to our study but only form some fractional part of the respondent. The process of selecting the practical

part is called sampling” - David S. Fox

**Method of Sampling** :- Several methods have been devised to select representatives samples. In general there are three types of sampling –

**Probability Sampling** :- Method of sampling which given probability that the sampling is representative of population is know as probability sampling. Probability sampling is of following types–

#### Random Sampling

- **Semi Probability Sampling** :- In this techniques, some elements of population have chance and some have no chance of selection. It is of following types –

- (a) Systematic Sampling
- (b) Stratified sampling
- (c) Multi Stage Sampling
- (d) Cluster Sampling
- (e) Multiple Sampling

- **Non-Probability Sampling** – In this techniques some elements of the population have no chance of selection, or the probability of selection cannot be accurately determined. There are four types of non-probability sampling –

- a. Incidental or Accidental Sampling.
- b. Judgement Sampling
- c. Purposive sampling
- d. Quota Sampling

**Need And Importance** :- Many equipped for future challenge, both as individuals as well as the member of the society. Certain instances come in our our day to day life where in the brightest students in the class did not succeed later in their lives as individuals having well rounded personalities as compared to their less intellectual counter parts. These examples are particularly evident in various fields like political, business and administration (singh, 2002). Then a question arises what is that help a person to succeed in life other than the knowledge about their subjects.

A keen investigation into the factors that are responsible to make a student a successful individual can be very fruitful. The present research concentrates into the study whether there is any impact of personality, career maturity and emotional intelligence on vocational aspirations of the students. There appear to be a lack of career maturity among the young students, there also appears to be a lack of vocational aspiration among the students, which seems to be an alarming level.

The research intends to explore the factors that relates to the vocation aspiration of the students and to what extent. The present research would go a long way not only in the field of education but since guidance if any impact of personality, career maturity, and emotional intelligence is found then suggestion may be given to enhance personality, career maturity and emotional intelligence, since these can be increased by intervention program.

The impact of nature of management of school and medium of instruction is also being studied which will make us know whether these variable also affects vocational aspiration along with personality, career maturity and emotional intelligence.

This is a very important issue because the correct diagnosis of the problem will result in effective remedies and solution which when implemented efficiently can change of the life of the students.

#### References :-

- Davidovitch, N., & Soen, D. (2006). Using students' "assessments to improve instructors" quality of teaching. *Journal of Further and Higher Education*, 30(4), 351–376.
- Department for Business, Innovation and Skills (2015). Fulfilling Our Potential Teaching Excellence, Social Mobility and Student Choice. Retrieved from [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/474227/BI S-15-623-fulfilling-our-potential-teaching-excellence-social-mobility-and-student-](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/474227/BI S-15-623-fulfilling-our-potential-teaching-excellence-social-mobility-and-student-choice.pdf)

choice.pdf

- Derounian, J. (2011) Shall we dance? The importance of staff–student relationships to undergraduate dissertation preparation. *Active Learning in Higher Education*, 12(2), 91–100.
- Ellington, H. (2000). How to Become an Excellent Tertiary-level Teacher, Seven golden rules for university and college lecturers. *Journal of Further and Higher Education*, 24(3), 311–321.
- Historical dictionary of African American Theater. Anthony D. Hill with Douglas Q. Barnett. Lanham: Scarecrow, 2009. Doe Reference PN 2270.A35.H53 2009
- *The historical encyclopedia of costume*. Albert Racinet. New York, N.Y.: Facts on File, 1988. Main and NRLF fGT510.R3313 1988
- Bain, K. (2004). What the best college teachers do. Cambridge, MA: Harvard University Press. Bruner, J. S. (1986) *Actual Minds, possible worlds*. Cambridge, MA: Harvard University Press.
- Browne, J. (2010). Securing a Sustainable Future for Higher Education in the UK. Retrieved from [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/422565/bis-10-1208-securing-sustainable-higher-education-browne-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/422565/bis-10-1208-securing-sustainable-higher-education-browne-report.pdf)
- Cohen, S., & Jurkovic, J. (1997). Learning from a Masterpiece. *Training and Development*, 51(11), 66-70. Cooke, R. (n.d.). Address at the University of Gloucestershire, UK
- Sharma; R.A. (2004), 'Essentials of scientific Behaviourable Research', Second Ed., Surya Publication, Merrut, P-70

## MGNREGA: A Livelihood and Social Protection Programme for Rural India: A Case Study in Nagpur District of Maharashtra State

**Smt. Rajani V. Sontakke**

Associate Professor, Dept. of Economics

**Dr. Madhukarrao Wanik**

PWS Arts & Commerce College, Nagpur, Affiliated to RTM Nagpur University

The main objective of Mahatma Gandhi National Rural Employment Guarantee Act was to provide 100 days guaranteed job to the rural poor in their distress time so that it can reduce vulnerability of agricultural production and provide livelihood to the rural poor. The present study was carried out to evaluate the performance and impact of MGNREGA on income of the poor in Nagpur district of Maharashtra State. According to the 2011 census Nagpur district have 36.07% population living under below poverty line in rural area and 24.2% population in urban area. Although MGNREGA provides only 100 days employment, and it is a very short period to reduce the rural poverty but the studies shows that it has positive impact on income of the rural poor of Nagpur district and it proves that MGNREGA has so much potential in reducing poverty from rural India, if the scheme is implemented properly. This study report on a survey of 837 beneficiaries working under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in Nagpur district of Maharashtra State. There are some glaring deficiencies but it has potential to create more jobs and permanent asset and benefiting rural poor and marginal farmers by providing irrigation wells and supporting the agriculture. The present study points out that, on overall basis the net percentage change in income of the beneficiary households was 66.73% in Rs. 5001& above income group. The study reveals that shift in income of the beneficiary household from lower to higher income groups was comparatively not so high in Nagpur rural area. The shift in income of the beneficiary households which is not to the extent of the poverty line income of Rs. 9000/- as per Tendulkar committee. As per the present

study, on overall basis 40.26% of the sampled beneficiaries crossed the poverty line of Rs. 5364/. An overwhelming 72% of the beneficiaries considered MGNREGA work very useful especially women, while 22% felt that due to late payment and large gap in demanding work and getting work under MGNREGA is useless. This study suggests that proper implementation of MGNREGA can lead Indian economy towards higher economic growth to enhance productive employability, enhance higher wages and income of the poor to spend more on education, health and skill development. Only MGNREGA can bring the poorer out of vicious cycle of poverty to virtuous cycle. All the schemes besides MGNREGA launched for the betterment of the poor should go hand in hand.

**Key Words** :- MGNREGA, Policy, Livelihood, Employment Generation, Poverty Alleviation, India.

### 1. Introduction :-

“The test of our progress is not whether we add more to the abundance of those who have much; it is whether we provide enough for those who have too little.”

..... **Franklin Delano Roosevelt**

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), a Central sponsored wage employment scheme, aims at providing livelihood security to the rural poor. The MGNREGA was implemented in 200 districts, in the first phase, with effect from Feb.2, 2006, and extended, subsequently, to additional 113 and all districts with effect from April 1, 2007 and May 15, 2007, respectively. The remaining districts were included under the Act with effect from April 1,



2008. This scheme was started in Nagpur district of Maharashtra State from May 2008.

The objective of MGNREGA is to ensure livelihood security of rural poor by guaranteeing at least 100 days of wage employment in a financial year to every household whose adult member volunteer to do unskilled manual work. The Act envisages the following....

- Enhance livelihood security of the rural poor by generating wage employment opportunities in works that develop the infrastructure locality.
- Rejuvenate natural resources base of the area concerned.
- Create a productive rural asset base.
- Stimulate local economy for providing wage employment.
- Ensure women empowerment.

Poverty is a significant issue in India, despite having one of the fastest growing economies in the world, clocked at growth rate of 7.6 percent in 2015, and a sizable consumer economy. According to the World Bank, the World had 872.3 million people below the new poverty line, of which 179.6 million people lived in India. In other words, India with 17.05 percent of total world's population had 20.6 percent share of world's poorest in 2011. (The Financial Times, 2014). As of 2014, 58 percent of the total population were living on less than \$3.10 per day. According to the Modified mixed reference period (MMRP) concept proposed by World Bank in 2015, India's poverty rate for period 2011-12 stood at 12.4 percent of the total population, or about 172 million people taking the revised poverty line as \$1.90. Rapid economic growth since 1991, has led to sharp reductions in extreme poverty in India. India is growing with 8 % growth rate since last two decades but India is still facing the problem of poverty. India could not eliminate poverty on the other hand it seems that it is deeply rooted in India, its incidence is high in some parts of India. Economic growth, though an essential condition for poverty reduction, it is by no means a sufficient condition for poverty reduction and vice-versa (Mehrotra & Delamonia, 2007). The interlinkages between economic growth and poverty reduction works through

various social sector outcomes which complement each other.

**1.1 Rationale for Study :-** During the last decades (2008-2019), on an average Rs. 50,000/- crore was invested for various wage employment initiatives under MGNREGA. Considering the size and scope of programme implementation, it is necessary for the policy makers and implementers to know the benefits and impact of such development intervention. Further, issues and challenges limiting the effective implementation of the programme at the grass-route level could be diagnosed through a detailed micro level data analysis and corrective measures be outlined, accordingly

**1.2 Scope and Coverage :-** The broad aims of this research study is to critical assessment of the policies, procedures and practices to reach conclusion especially on appropriate modifications required and assessment of performance of the Act and documentation of best practices for replications.

**2. Review of Literature :-** As mentioned earlier, MGNREGA provides opportunity of 100 days guaranteed employment throughout the year, those who are in distress and willing to do unskilled work, it has been observed that MGNREGA provided work to those poorer who are in acute need of job. In India several studies have been made to analyse the performance and evaluation of MGNREGA in rural India as well as it's impact on various aspects like income generation, asset creation, poverty reduction, women empowerment, agricultural productivity, income and livelihood of the rural poor and vulnerable households and rural development.

Dutta, et.al. (2014) in their study survey of 3000 households in Bihar, viewed MGNREGA as a scheme with potential to reduce poverty in Bihar. They found a pro-poor rationing and confirm that the scheme was reaching the poor, even as the richer households also share in the gains. The author documented that under ideal conditions, the implementation of the scheme would result in

bringing down poverty rates by 14 percent and more.

Klonner and Oldiges (2013, 2014), reported in their research that the poverty gap between Phase I and Phase II districts has decreased. Among SC/ST households both phase I and phase II districts experienced a decline in equality with the effect being more for phase I districts. They found that while there were no statistically significant differences for all rural households as a sub-set showed statistically significant large effects on consumption and consumption based poverty measures for the agriculture lean season while no such effect was revealed in the agriculture peak season.

Ravi and Engler (2015) in their study indicated that MGNREGA significantly increased monthly per capita expenditure on food and non-food items. It improved food security by reducing the number of meals forgone. Participation in MGNREGA increased the probability of savings by households.

Dasgupta, Aparajita (2013) in her study stated that while the policy did not help correct for long-term past health deficiencies, it was useful in buffering recent drought shocks, the effect size of which varied by policy relevant sub-groups. The availability of the programme provided a buffer for the children of marginalized and socially excluded caste groups.

Mani, et.al.(2013) in their study found that access to the programme had large and positive effects on children's performance on reading comprehension tests, maths tests and test for verbal ability.

Gehrek (2013) in his study found an increase in the share of inputs allocated to more profitable crops. According to him by enabling a shift to high risk-profitable crops, raised incomes of small marginal farmers.

The study of Medak district of Andhra Pradesh pointed out that, around 12% of the household income was increased as more members of the same household were being able to work. With this increased income of MGNREGA, the rural households started their own ventures. Another study of Birbhum district of West Bengal

stated that 17% (out of 96 job card holders surveyed) of the rural households used MGNREGA's income to run, expand or start a rural business.

Rao and Madhusudan (2013) in their study revealed that a low coverage of SC/ST beneficiaries under individual land development works seems to point to the distributing view that the expansion (inclusion of small and marginal farmers etc.) of eligibility criteria to include other categories had had an adverse impact on socially and economically disadvantaged groups.

**3. Methodology :-** The present study is based on the performance evaluation of MGNREGA and impact on income of MGNREGA beneficiaries in Nagpur district's rural area. According to the 2011 census Nagpur district have 36.07% population living in below poverty line in rural area and 24.2% population in urban area. Nagpur city is the hottest city in the world and it always faces drought situation, which make the rural poor unemployed, hopeless and frustrated. Rural population is still struggling for livelihood. The present study is a part of my **Ph.D.thesis** and based on primary data collected by survey and personal interview across all blocks of Nagpur district and inferences are made by observational study for achieving the following objectives.

**3.1 Objectives of the study :-** Despite certain attempts made to evaluate the impact of MGNREGA on poverty alleviation there remain a gap. Many researchers conducted study in various parts of Maharashtra State but not in Nagpur district. In order to fill the gap, the present study was carried out on 'Impact of MGNREGA on Income generation in Nagpur district of Maharashtra State.' It has been formulated with the following objectives:

1. To examine the socio-economic characteristics of MGNREGA beneficiaries.
2. To examine the efforts made by the government.
3. To discuss the poverty alleviating linkages.
4. To review the problems faced by the MGNREGA beneficiaries.
5. To discuss the impact of MGNREGA on income

in reducing poverty.

- To suggest the remedies in proper implementation of MGNREGA.

For accomplishing the objectives of the study to evaluate the performance of MGNREGA's overall position in Nagpur district, primary data has been collected from the field and secondary data from various published sources and websites. Secondary data has been collected from various publications and other scholarly research works which includes academic journals, govt. and non-govt. publications and various websites.

**3.2 Significance of the study :-** The present study is a significant attempt to examine the role of MGNREGA in poverty reduction which will helpful to analyse lacunae in our country. This study will be helpful in analyzing lacunae in the poverty reduction programmes in the country. Further, it can be helpful to explore some untapped areas where potential for development exists and rectification of the flows in the present system. The study will also be equally important for all those interested in undertaking similar studies in the context of other aspects of MGNREGA because certain methods and approaches evolved and employed should be helpful in carrying out further studies of similar nature.

**4. Definition of poverty & Poverty Analysis :-** Poverty can be defined as a social phenomenon in which a section of the society is unable to fulfill even its necessities of life. Attempts have been made in all societies to define poverty, but all of them are conditioned by the vision of minimum or

good life obtaining in society. In India, the generally accepted definition of poverty emphasizes minimum level of living rather than a reasonable level of living.

"Poverty is described as lack of the income to acquire the minimum necessities of life."

"Poverty is multidimensional- Deprivation in income, illiteracy, malnutrition, mortality, morbidity, access to water and sanitation, vulnerability to economic shocks."

Since, poverty is a multidimensional concept, the definitions of poverty changed time to time.

**4.1. Growth, Poverty and Per capita Income :-** The poverty ratio (based on the Monthly Per Capita Expenditure (MPCE) of Rs. 816 for rural areas and Rs. 1000 for urban areas in 2011-12 at all India level), has declined from 37.2 percent in 2004-05 to 21.9 percent in 2011-12. In absolute terms, the number of poor declined from 407.1 million (40.71 crore) in 2004-05 to 269.3 million (26.93 crore) in 2011-12 with an average annual decline of 2.2 percentage points during 2004-05 to 2011-12.

The National Poverty Line estimated for rural areas during 2011-12 was 816 Rs. Per capita per month, whereas, for urban areas it was recorded at 1000 Rs. Per capita per month. Thus, for a family of five, the all India poverty line in terms of consumption expenditure would amount 4080 Rupees per month in rural areas and 5000 rupees per month in urban areas. These poverty lines would vary from State to State because of inter-State price differentials.

**Table 1: India: Percentage of Growth (GDP), Poverty and Per capita Income.**

Year	GDP (%)	Poverty Ratio (%)			Per capita Income In Rs.
		Rural	Urban	Total	
1993-94		50.1	31.8	45.3	
2004-05	7.0	42	25.5	37.2	NA
2009-10	8.4	33.8	20.9	29.8	33843
2011-12	6.5	25.5	13.7	21.9	37850
<b>Annual Average Decline: 2004-05 to 2011-12 (% points per annum)</b>		2.32	1.69	2.18	

Source: Economic Survey 2013-14.

The above table no.1 depicts that the economic growth during the FY 2004-05, the GDP rate was but the poverty ratio was 37.2% as a whole.

During the FY 2009-10 the growth rate increased by 8.4% and poverty declined from 37.2% to 29.8% and per capita income also increased by Rs. 33843. During the FY 2011-12 the GDP rate was declined by 6.5% and poverty also declined by % but it is seen that per capita income rises by Rs.37850.

The ratio is based on the methodology that was suggested by the Suresh Tendulkar Committee that suggests the factors in money spent on health and education besides calorie intake to fix a poverty line. As per Tendulkar methodology, the poverty line has been expressed in terms of MPCE based on Mixed Reference Period.

**4.2 Government's Initiative by MGNREGA to Remove Poverty :-** Government of India has taken a historical step to reduce rural poverty, i.e., **Mahatma Gandhi National Rural Employment Guarantee Act in 2005 (MGNREGA)**, providing right to work with dignity and a means to promote livelihood security in India's rural areas. MGNREGA launched in III phases throughout India from 2 Feb., 2006 to 1 April 2008. This Act came into existence with a combination of previous schemes NFFWP (2004), SGRY (2000), JSGY (1999), EGS (1993), JRY (1989), NREP (1980), RLEGP (1983). The main significance of the Mahatma Gandhi National Rural Employment Act is to improve the

livelihood conditions of the rural poor by providing 100 days of employment to any rural household who are willing to do unskilled manual work. Although the Act provides an opportunity to work in the lean period, but it helps the poor to maintain their consumption level and strengthen the livelihood resources during this critical period. Only the fastest economic growth cannot provide social justice and equality with development unless it is connected with poverty alleviation and employment generation opportunities for deprived and marginalised people of the society.

According to World Bank, MGNREGA is the largest scheme in the world covering 15% population under this scheme. (News on Akashwani, 8July2015 at 10.00 a.m.) This Act provides 100 days guaranteed unskilled manual work, is supposed to have generated 12 million person days of work at a total expenditure of Rs. 1,66,760 crore since 2006.(GOI 2013a; 286). The trend in allocation of the budget in rural development is mixed. The provision of expenditure on MGNREGA since 2009-10 was Rs. 39,100 crore, Rs.40,000 crore, Rs.33,000 crore, Rs. 33,000 crore and Rs. 37,082 crore, Rs. 38,500 crore, Rs.47,499 crore, Rs.48,000 crore, during the years 2009-10,2010-11,2011-12,2012-13,2013-14 , 2014-15,2015-16, 2016-17 and 2017-18 respectively, it is around 1% of the union budget.(See Table)

**Table 2: Budgetary Allocation on MGNREGA & Government's Initiatives to reduce poverty: Flagship schemes-**

**Budgetary Allocations and Utilization for select Flagship Scheme (Rs. In Crore)**

Scheme	Ministry/Department	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
MGNREGA	MORD	39,100	40,100	40,000	33,000	33,000	38500	38500	47499
PMGSY	MORD	10,933	12,000	20,000	24,000	21,700	NA	18290	19000
IAY/PMA Y Rural	MORD	7918	10,000	10,000	11075	15184	NA	10116	15000

NRDWP	DW&S	8000	9000	9350	10500	11,000	NA	4370	5000
Nirmal Bharat Abhiyan/ Swacha Bharat Mission	DW&S	1200	1580	1650	3500	4260	NA	7469	11300
ICDS	W&CD	6750	8700	10,000	15,850	17,700	NA	NA	NA
Sarva SA	HRD	13,099	15,000	21,000.47	25,554.76	27258	NA	NA	NA
Mid-Day Meal	HRD	10314.93	8370.12	10360	11937	13215	NA	NA	NA

Source: Yojana, March, 2017.

### 5. Performance Evaluation of MGNREGA in Nagpur District of Maharashtra State in India :-

The performance evaluation study was done in 2009 of 21 States where, Maharashtra ranked as low as 18. In 2007-08 (NCAER-PIF 2009), less than 50% of the districts. The recent CAG Report stated that Maharashtra has utilized only about 20% of the funds allocated. A performance audit report of the MoRD points out many issues such as those related to job cards, wages, work-site facilities, administrative and technical sanction for works, maintenance of records at the Panchayat level inspection of works, the institutional set-up for audits, vigilance and technical support and the non-appointment of adequate technical staff (GOI2008). A process study by the National Institute of Rural Development brings out in the planning and implementation of the MGNREGA in Maharashtra- low fund utilization, lack of motivation among officials and inadequate capabilities among Gram Panchayat (GP) functionaries. (Rao, Jadhav, Ambadkar & Jayalaxmi 2010). The State has had a low work completion rate between 2008-09 and 2010-11(with 36.16% falling to 32.20%) and further to 22.50%. The average number of days of work per household has lingered between 39 and 50 since 2006. (GOI 2013c 27 EPW, June 29, 2013, Vol.XLVIII, No. 26&27 pg.no.62)

Though, the performance of MGNREGA in Maharashtra State remained fluctuating during the year 2014-15, many households of Marathwada region of Maharashtra State has utilized the opportunity in their distress time because this year the effect of drought was so intensive that made many award winner farmers to work under MGNREGA. Not only SCs and STs but also general category population is responding to MGNREGA. The acute drought during the FY 2014-15 has proved that, there is none other source than MGNREGA in the distress time.

### 5.1 Performance Evaluation of MGNREGA in the Study Area :-

MGNREGA was introduced in the III rd Phase in Maharashtra State and in Nagpur District in 1 April, 2008, to tackle the problem of poverty through providing 100 days guaranteed work with dignity. This was to help the poor families to cross over the poverty line by raising their income level with the help of income generating assets provided under the scheme. But independent evaluation studies conducted in Nagpur district revealed some glaring deficiencies in the implementation of this scheme. An analysis of the findings of present study has been made under the evaluation of MGNREGA scheme.

**5.2 Discussion & Analysis :-** Nagpur district has 14 blocks. Responses were obtained for **837** respondents across **13** blocks of Nagpur district. When MGNREGA was launched in the year 2008-9, the labourer were not responded to this scheme because of lack of information about MGNREGA, & low wages under MGNREGA and therefore, its performance was very poor, only labour oriented Umred and Bhivapur blocks had taken up few works, but projects were not completed. All 13 rural blocks have **795 GPs** but now in all the GPs MGNREGA work is taken up at small level.

The study was carried out in the year 2012-13 to observe the impact of MGNREGA on

respondent's income, that has been analysed by using questionnaire, in-depth interview method and observation. A study was conducted with 837 MGNREGA respondents from Bhivapur 112, Hingna 42, Kalameshwar 88, Kamptee 47, Katol 59, Kuhu 34, Mouda 66, Nagpur(Rural)39, Narkhed 49, Parsheoni 81, Ramtek 62, Savner 25 Umred 130 blocks, which included information of occupation, income, caste, education, debt and source of credit. The socio-economic characteristics of selected 837 respondents of all 13 blocks of Nagpur district are shown in the following table no.

**Table No.3: Socio-Economic characteristics of selected Respondents.**

Sr. No.	Socio-Economic Characteristics of Respondents	Number of Respondents	% of Respondents
1	Male	556	66
2	Female	281	34
	Total	837	100

Source: Primary Data

Sr. No.	Religion-	Number of Respondents	% of Respondents
1	Hindu	639	76.34
2	Muslim	04	0.48
3	Christian--	Nil	Nil
4	Buddhist194	194	23.18
	Total	837	100

Sr. No.	Category of the Respondents	Number of Respondents	% of Respondents
1	SC	213	25
2	ST	33	4
3	OBC	190	23
4	Other	331	40
5	Adiwasi	70	8
	Total	837	100

Sr.No.	Educational qualification of the Respondents:	Number of Respondents	% of Respondents
1	Below SSC	780	93.95
2	HSSC	51	0.75
3	UG	06	06
4	PG	---	Nil
	Total	837	100

Sr.No.	Age Groups:	Number of Respondents	% of Respondents
1	18-25	37	4.42
2	26-35	286	32.01
3	36-45	321	38.35
4	46-55	189	22.58
5	56 & above	23	2.74
	Total	837	100

Sr. No.	Types of works undertaken and % of respondents engaged in MGNREGA:	Number of Respondents	% of Respondents
1	a) Pandhan Rasta/Kaccha Rasta	419	50.06
2	b) Nursary Work	249	29.25
3	c) Construction	35	4.18
4	d) Rajiv Gandhi Sewa Kendra	08	0.96
5	e) Irrigation Wells	123	14.69
6	f) Forestry work	03	0.36
	Total	837	100

Sr. No.	Source of Information:	Number of Respondents	% of Respondents
1	a) Panchayat Samiti	395	47.19
2	b) 837Gram Panchayat	412	49.22
3	c) Media	Nil	Nil
4	d) Neighbour/Friend	30	3.58
	Total	837	100

Sr.No.	Do you get work after completion one project?	Number of Respondents	% of Respondents
1	Yes	191	22.93
2	No	646	77.07
	Total	837	100

Sr.No.	Time taken for getting work after registration	Number of Respondents	% of Respondents
1	a) Within 15 days	176	21
2	b) 16 days to 1 month	416	49.7
3	c) More than 1 month	255	30.5
	Total	837	100

Sr.No.	Benefited by other GOI schemes (Indira Awas Yojana/PDS etc.)	Number of Respondents	% of Respondents
1	Yes	94	33.94
2	No	743	67.51
	Total	837	100

Sr. No.	Time taken for payment of wages:	Number of Respondents	% of Respondents
1	a) 2-4 weeks	306	36.56 %
2	b) More than 4 weeks	531	63.44%
	Total	837	100

Source: Primary Data (Field Survey of Nagpur District collected by the researcher.)

**Findings :-** From all 13 blocks of Nagpur district 837 beneficiaries were selected by simple random sampling method, out of them 76.34% were men and 34% were women, out of them 76.34% were Hindus, 0.48% were Muslims, and having good educational background no respondent was found from Christian religion working under MGNREGA, 23.18% were Budhhist. Category wise break-up shows that 25% were SCs, the lowest 4% were STs, 23% were OBCs and highest percentage with 40% from Other category were engaged in MGNREGA work. It has also been found that 8% of Adivasis were also engaged in NREGA work because of afforestation, they have lost their livelihood. Out of total beneficiaries highest percentage with 93.18% were having lower educational background and lowest with 0.75% from under graduate were engaged in NREGA work and they had chosen this opportunity at last resource. Age wise break-up of the respondents shows that highest percentage with 38.35% from youngest age group 26-35 and lowest from 56 & above were engaged in NREGA work. It means that the actual workforce is utilized in NREGA.

While implementing MGNREGA, it was expected that permanent asset will be created so that the objective of income & employment generation with sustainable development will be increased and will be helpful in reducing poverty. But in the actual site of NREGA though the highest work of Pandhan Rasta/Caccha Road was taken up at 50.06% but the quality of work was very poor and the forestry work with lowest percent has been undertaken. It was asked to the beneficiaries that whether they get work quickly after completion of one project, only 22.93% answered yes. It shows that due to non-availability of work in time, the respondents go for searching another

work. There was a huge gap in registration under NREGA and getting work. 49.7% beneficiaries could get work under NREGA in more than 1 month and it was surprising that they did not get unemployment allowance rather they did not know that there is any provision of unemployment allowance. Although there are some deficiencies in NREGA implementation, its impact on income is also noticeable.

### 5.3 Impact of MGNREGA in the study area :-

MGNREGA is one of the major poverty alleviation programme in India to provide 100 days employment guarantee to the rural poor in their lean period, this scheme gives right to work with dignity. It provides jobs not only to the people living below poverty line, but to all poorer or unemployed adults also those who want to work under this scheme. MGNREGA was launched for rural development with dual objectives of poverty reduction and employment generation. While achieving these objectives special attention would be given to create durable assets for sustainable development. The incremental income, generated by the assets, enables the rural poor to cross poverty line. Therefore, the jobs provided should be sufficient enough to generate a volume of income which will enable the rural poor to cross the poverty line. The present study attempts to evaluate the impact of MGNREGA on economic conditions of the rural poor. This has been attempted with the help of two important variables, viz-

- i. Impact of the scheme on income of the beneficiaries, and
- ii. Impact of the scheme on employment of the beneficiaries.



In this paper the impact of MGNREGA on income is measured.

**Monthly Per Capita Expenditure :-** Monthly per capita expenditure has been used as a proxy indicator to measure the impact of MGNREGA on poverty levels to be positive if the increased in income has translated into expenditure, particularly on food and essential items of household. The study conducted in monthly percapita consumption expenditure of around 10% for households. Expenditure on non food consumables increased significantly by around 23%. Expenditure on transportation decreased significantly due to the MGNREGA by around 65%.

The wage seekers spending their additional wages from MGNREGA mainly on food(50%), clothing (20%), education(10.15%) and health care(10%).

The study conducted in Chhattisgarh, Jharkhand and Odisha, most of the sample households reported that if MGNREGA had not been implemented in the study areas, most of the households would not have had the capacity to purchase enough foodgrains. MGNREGA seems to be helpful to provide poor households the ability to withstand economic shocks and deal with inflation.

Another study of Andhra Pradesh stated that participation of MGNREGA had significant and positive impact on consumption expenditure, intake of energy and protein and asset accumulation.

**5.3.a Impact on Income of the Beneficiaries :-** In examining the success of the MGNREGA in meeting its poverty alleviation objectives change in total household income becomes an important indicator. The analysis of incremental income generated by providing employment in distress becomes much more meaningful when its variables like registration of beneficiaries, employment created in mandays and wages given to the beneficiaries and livelihood of the

MGNREGA families to cross the poverty line. In other words, the absolute increase in income of the beneficiary households crossing the poverty line can well be treated as measuring rod to evaluate the success of the programme. In the present study, income generation was estimated at two points of time, i.e. pre implementation of the scheme which served as a benchmark for income impact of the scheme.

**Definition of Income Used :-** As mentioned earlier, MGNREGA provides opportunity of 100 days guaranteed employment throughout the year, which are in distress and willing to do unskilled work.

a) For calculation of net family income pre-NREGA scheme, the following abbreviation were used:

NFIPNS

IDLA=Income from land asset,

IDOA= Income from Other Asset,

IAOS= Income from any other source.

Therefore;  $NFIPNS = IDLA + IDOA + IAOS$

b) For calculating of net family income from scheme. (NFIWS), the following abbreviations were used:

c)  $NFIPNS = IDLA + IDOA + IAOS + SI$

d) Where SI=Scheme Income.

### **5.3 .b Income Level During Pre-MGNREGA:**

#### **5.3 .b.i Income Level of Beneficiary Households :-**

As mentioned earlier, MGNREGA provides opportunity of 100 days guaranteed employment throughout the year, those who are in distress and willing to do unskilled work. It has been observed that MGNREGA provided work to those poorer who are in acute need of job.

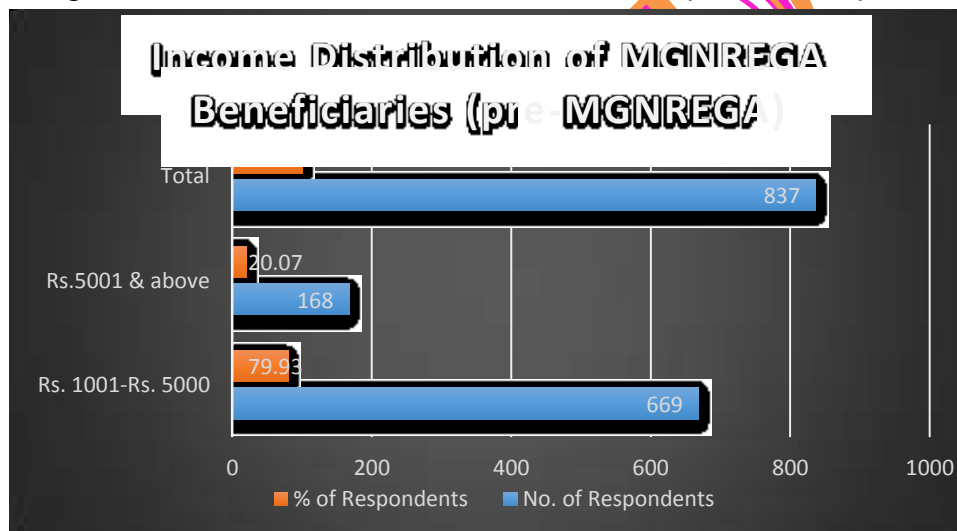
In assessing the impact of MGNREGA, on poverty, it is important to also look at the interplay between NREGA and market wages. Literature suggests that workforce programmes like MGNREGA that can put upward pressure on agriculture wages, which are likely to be some of the most effective ways of improving the welfare of the poorest.

Under this study the income of beneficiaries was assessed by the research scholar. As per the investigator's assessment, no one beneficiary was found in income group of Rs. 0-1000, it was a positive response of MGNREGA scheme seen in the study area.

The present study points out that, as the 97% beneficiaries could not increase income before MGNREGA. They were labourers, there was not significant increase in income before MGNREGA. They were wandering here and there

for the employment. The present study points out that, on overall basis (Figure 1), pre MGNREGA 79.93% (669) of the beneficiaries were in income group upto Rs. 1001-5000/- and 20.07% (168) in income group of Rs. 5001 & above. There was no one beneficiary found in the income group of Rs. 0-1000 per month. It has been observed from the table under reference that majority of beneficiaries were in income group of Rs. 1001 to Rs. 5000/-.

Figure 1 : Income Distribution of MGNREGA Beneficiaries (Pre-MGNREGA)



Source: Computed by the researcher.

**5.3.b.ii Shift in Income Level of Beneficiary households (post-MGNREGA) :-** The change in the income level of the poor are not only due to the employment provided under MGNREGA scheme but also due to other types of works also. Because MGNREGA provides only 100 days work and the poorers have to find other jobs and other types of work like factory daily wagger or on construction work. Since the beneficiaries were mostly from daily wagers (97%) and MGNREGA wages are lower than other wages, labourer preferred to work on other sites rather than MGNREGA, like building construction, corporation's construction or any other sites where they can get more wages than MGNREGA especially male respondents could go out of their village for the employment. Following 2 reasons have been found in the present study:

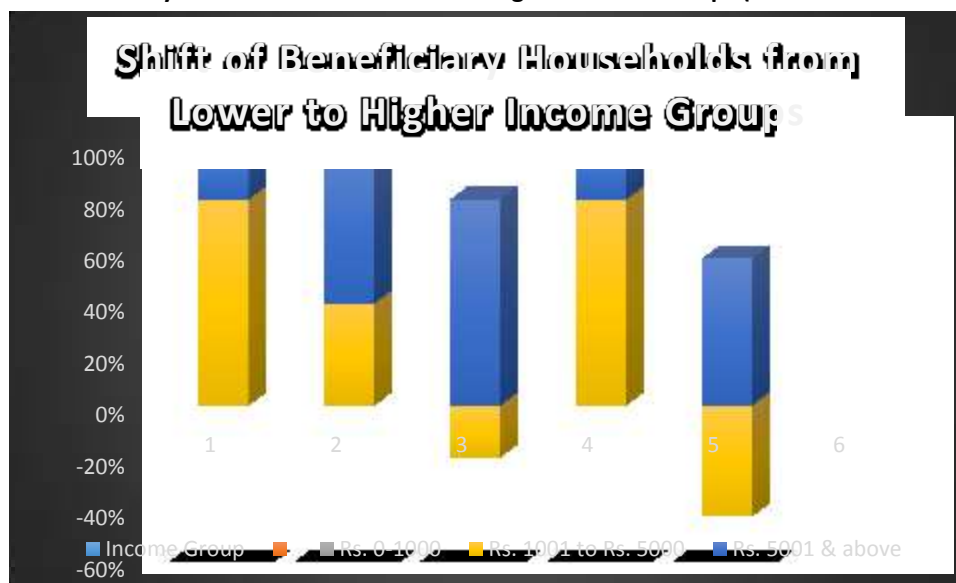
- i) In this study it has been considered that most of the people are attached to this scheme specially women.
- ii) Men women difference is sticking under MGNREGA shifting in income group from lower income to higher income group is a healthy indicator.

Overall analysis depicts that net percentage change in income of the beneficiary households was 66.73% in Rs. 5001 & above income group, in the income group of Rs. 1001 to Rs. 5000; -50.37 beneficiary households which was lower than the income group of Rs. 5001& above in income of the beneficiary households was 66.73% in Rs. 5001/- & above income group in the income group of Rs.1001/- to Rs. 5000/- -50.37 beneficiary households which was lower than the income group of Rs. 5001& above. A further examination

of the table under reference reveals that shift in income of the beneficiary households from lower to higher income groups was comparatively not so high in Nagpur rural area. The table also depicts that the shift in income of the beneficiary households which was not to the extent of the poverty line income of Rs. 9000/- as per Tendulkar

committee. It was observed that where two persons of the family were working, their financial condition was better than the one person earner in the family. It was also observed that the financial condition was worst, where two persons or more were working and more family members were dependent on them.

Figure 2: Shift of Beneficiary House Holds from Lower to Higher Income Groups (No. of Beneficiaries)



Source: Calculated by the Researcher.

**5.3.c Crossing the Poverty Line :-** Since, MGNREGA is implemented with the objective of reducing poverty, therefore, it was needed to know that how many beneficiaries working under MGNREGA could cross the poverty line and how far the government is away from the achievement of poverty reduction target. Some of the experts in this field have argued that crossing the poverty line index does not fully reflect the impact of the scheme in the sense that it does not take account of those whose income might have risen but not to

the extent of the poverty line income. Therefore, shift in income from lower to higher income groups, as mentioned above supplemented to poverty line criterion. As per the present study, on overall basis (Table No.5.3.c) 60.33% of the sampled beneficiaries crossed the poverty line of Rs. 5364/- when the net percentage of beneficiary households was calculated it revealed that the net percentage of beneficiary households, who were also to cross the poverty line, fell from 60.33% to 40.26% on overall basis.

Table 5.3.c: Beneficiary crossing the Poverty Line.

Base Year (APL) No. of Persons		Present Year (CPL)		Crossing the Poverty Line		Total
No. of Persons	%	No. of Res.	%	No. of Res.	%	
168	20.07	50.5	60.33	337	40.26	837

Source: Calculated by the Researcher.

Notes: i) APL= Above Poverty Line

iii) CPL= Crossing the Poverty Line

**5.4 Conclusion and Suggestions :-** From the above observation and data analysis it can be concluded that MGNREGA has so much potential in rural development and alleviating poverty and generating employment. If all the schemes were properly implemented in time for the benefit of the poor and disadvantaged, the dream of becoming economic superpower in the world can be achieved. Where higher economic growth rate is achieved but 22.06% people are living below poverty line can not lead the nation towards economic superpower. The results do not show that India is going forward to achieve the Millennium Development Goal 1 to reduce poverty. There is a need of proper implementation of all these schemes which are meant for the poor and disadvantaged. In India, the LPG era is characterized by the economic high growth rate which has tempted the jobless. But job growth is only 1%. Under such circumstances MGNREGA is addressing the issue of unemployment in rural area where unemployment is higher due to natural calamities such as flood, drought, hailstorm, diseases on crop etc. India's MGNREGA is the only Act which gives right to its rural poor. It has to play a vital role because of its human approach. It serves as an effective safety net for the unemployed especially during famine and drought. MGNREGA focuses to increase target income by creating more market access and opportunities for the poor households and improving their standard of living. In case of the labour surplus economy, the impact of MGNREGA is very effective. It observes the surplus labour in rural areas and because of it the wage rate becomes higher and poor households move towards their desired income level and overcoming from poverty. MGNREGA increased the income of the households by providing huge number of employment in rural areas. Thus, the target income enhanced by creating opportunities and market access from multiple dimensions and MGNREGA helps to improve the situation of the poor households.

#### 5.6 Suggestions:

##### [A] At Village Level/ GP level:

- i. Awareness regarding the objectives and approach of the scheme should be created amongst beneficiaries and they should be educated to develop a positive approach towards the scheme. For this ASHAs /Self-help Groups, Anganwadi workers schoolteachers, elderly persons of the community should be utilized.
- ii. Motivate villagers to register their names under MGNREGA by Gram Sewak and mates, they should be properly trained and educated regarding the objectives.
- iii. Villagers should be encouraged to go for Grievance Redressal regarding MGNREGA work like payment of wages, job cards, unemployment allowance, bad treatment of the officials, worksites facilities etc.

##### [B] At District Level :

- i. Immediate follow up of proposals sent by the villages with local government should be done to provide another work quickly.
- ii. Various committees should be formed at district level to understand the problems of beneficiaries as well as implementation should be discussed with local NGOs representatives and they should be part of committees.
- iv. Delay in payment is a common matter which is not attracting beneficiaries towards MGNREGA work therefore, it is suggested daily payment should be given to the beneficiary.
- v. Monitoring of the performance is absent in the study area. The job of the officials at DRDA and block level should be decided and to ensure a steady progress of this scheme, block level officials should also be made responsible for this.

##### [C]At State Level :-

- i. State level advocacy group representing the all MGNREGA districts should be formed to establish dialogue with the State Government, for this, there should be vigilance that 100 % budget is to be utilized.
- ii. There should be no pressure on officials for implementation, on the other hand it should be

done by heart.

**[D] At National Level/Central Level :-**

- i. Interstate advocacy group should be formed to establish dialogue with the union Government.
- ii. Efforts should be made for increase in minimum wages all over.
- iii. Funds should be released timely and in sufficient amount
- iv. Concrete efforts should be made to ensure the transparency and accountability by institutions engaged in implementation of the scheme at different levels.

**References :-**

- Shawn Donnan, World Bank Eyes Biggest Global Poverty Line Increase in Decades.
- Bhagvati & Pangariya (2013): Why Growth Matters: How Economic Growth in India Reduced Poverty and the Lessons for other Developing Countries public Affairs" ISBN 978610393737
- Azam, M. (2011), The Impact of Indian Job Guarantee Scheme on Labour market Outcomes,' Evidence from Natural Experiment."
- Dutta, et.al.(2014): Right To Work? Assessing India's Employment Guarantee Scheme in Bihar, Washington DC, The World Bank.
- Klonner, S. & Oldiges (2014): Employment Guarantee & Its Welfare Effects in India, Mumbai, IGIDR 'MGNREGA Taking Stock and Looking Ahead Proceedings of the International Conference on MGNREGA (26-28 March).
- Ravi & Angelar (2015), 'Workfare as an Effective Way to fight Poverty: A Case of India's NREGS World Development).
- Dasgupta, Aparajita (2013): Can the Major Public Works Policy Buffer Negative Shocks in Early Childhood? Evidence from Andhra Pradesh, Proceedings of the International Conference on MGNREGS, IGIDR , Mumbai.
- Mani, Shubha et.al.(2013): 'Impact of NREGS on Schooling and Intellectual Human Capital Bill and Melinda Bill Gates Foundation. MGNREGA- Taking Shock and Looking Ahead:

Proceedings of the International Conference, IGIDR , Mumbai."

- Gehreke, G. (2013): Does the Indian Employment Guarantee Reduce Households Risk Exposure? Assessing the Effects of the NREGA on crop Choice, German Development Institute
- Rao, et.al. (2013): Role of MGNREGA in Improving Land Productivity. Centre for Budget & Policy Studies, Bangalore for Department of Rural Development, Govt. of Karnataka.
- Dasgupta, S. and S. Sudarshan (2011), "Issues In Labour Market Inequality and Women's Participation in India's National Rural Employment Guarantee Act," Working Paper No.98, Geneva International Organization.
- Dutta, P., R. Murgai and W.V. Dominique (2012), "Does India's Employment Guarantee Employment? Policy Research Paper, Washington D.C. World Bank 2012.
- India, Human Development Report (2011) GOI, Oxford University Press, New Delhi.
- Jha, R., Gaina R. and Pandey, M. K., "Net Transfer benefits under India's Rural Employment Guarantee Scheme," Journal of Policy Modelling, Vol.34, No, 2, 2012.
- Engler, M., Ravi, S. "Workfare as an Effective Way to Fight Poverty: The Case of India's NREGA, 2012," Retrived from Social Science Research Net Work;<http://ssrn.com/paper=1336837>, accessed on 15 May 2012.
- Babu, V.S. and Rao, K. H. "Impact of MGNREGA on Schedule Castes and Schedule Tribes: Studies Conducted in 8 States," Hyderabad National Institute of Rural Development (NIRD), 2010.
- GOI, Annual Report (2012-13), New Delhi, MoRD 2010-11.
- Mahajan, Ashwini, and Dutt, Gaurav (2013), "Indian Economy,"Pg. no. 441
- GOI, Economic Survey 2012-13 Oxford University Press, New Delhi.

## Rural Development in India

**Dr. Devendra Vishwakarma**

MA Economics, MA Rural Development, MSW, MBA, LLB

National Secretary SSMWA, President Youth Economic Association, Member Indian Economics Association

**Introduction :-** India is a country of villages and its development is synonymous with the development of the people living in rural areas. India is a vast and second most populous country of the world. But a big part of this population has been leading an uncertain economic life due to non-synchronization of employment opportunities in agriculture sector because of the fast growing population. Rural development has been receiving increasing attention of the governments across the world. In the Indian context rural development assumes special significance for two important reasons. First about two thirds of the population still lives in villages and there can not be any progress so long as rural areas remain backward. Second, the backwardness of the rural sector would be a major impediment to the overall progress of the economy. India is predominately an agricultural country and farming is their main occupation. In terms of methods of production, social organisation and political mobilization, rural sector is extremely backward and weak. Moreover, technical developments in field of agriculture have increased the gap between the rich and poor, as the better off farmers adopted modern farm technology to a greater extent than the smaller one's. The all India Rural Credit Review Committee in its report warned "If the fruits of development continue to be denied to the large sections of rural community, while prosperity accrues to some, the tensions social and economic may not only upset the process of orderly and peaceful change in the rural economy but even frustrate the It was therefore felt necessary to national affords to set up agricultural production." make arrangements for the distribution of fruits of development to the rural weak and backward section of society.

It is rightly pointed out that a purely agricultural country remains backward even in respect of agriculture. Most of the labour force in India depends on agriculture, not because it is remunerative but because there are no alternative employment opportunities. This is a major cause for the backwardness of Indian agriculture. A part of the labour force now engaged in agriculture needs to be shifted to non-agricultural occupations.

India lives in its villages, and while the cities have grown immensely over the last 20 years, rural areas have not seen that kind of development. For India's economy to be strong, the rural economy needs to grow. Rural areas are still plagued by problems of malnourishment, illiteracy, unemployment and lack of basic infrastructure like schools, colleges, hospitals, sanitation, etc. Rural Development in India is one of the most important factors for the growth of the Indian economy. India is primarily an agriculture-based country. Agriculture contributes nearly one-fifth of the gross domestic product in India. In order to increase the growth of agriculture, the Government has planned several programs pertaining to Rural Development in India. The Ministry of Rural Development in India is the apex body for formulating policies, regulations and acts pertaining to the development of the rural sector. Agriculture, handicrafts, fisheries, poultry, and dairy are the primary contributors to the rural business and economy.

**Rural Development in India :-** Rural development in India has witnessed several changes over the years in its emphasis, approaches, strategies and programmes. It has assumed a new dimension and perspectives as a consequence. Rural development can be richer and more meaningful only through the participation of clienteles of development. Just as implementation is the touchstone for planning,

people's participation is the centre-piece in rural development. People's participation is one of the foremost pre-requisites of development process both from procedural and philosophical perspectives. For the development planners and administrators it is important to solicit the participation of different groups of rural people, to make the plans participatory.

The Government's policy and programmes have laid emphasis on poverty alleviation, generation of employment and income opportunities and provision of infrastructure and basic facilities to meet the needs of rural poor. The Ministry of Rural Development in India is the apex body for formulating policies, regulations and acts pertaining to the development of the rural sector. Agriculture, handicrafts, fisheries, poultry, and diary are the primary contributors to the rural business and economy. The introduction of Bharat Nirman, a project by the Government of India in collaboration with the State Governments and the Panchayati Raj Institutions is a major step towards the improvement of the rural sector.

The National Rural Employment Guarantee Act 2005 was introduced by the Ministry of Rural Development, for improving the living conditions and its sustenance in the rural sector of India. The Ministry of Rural Development in India is engaged in legislations for the social and economic improvement of the rural populace. The ministry consists of three departments viz., Department of Rural Development, Department of Land Resources and Department of Drinking Water Supply. Under the department of rural development, there are three autonomous bodies viz., Council for Advancement of People's Action and Rural Technology (CAPART), National Institute of Rural Development (NIRD) and National Rural Road Development Agency (NRRDA). The objective of the ministry can broadly be elaborated as to encourage, promote and assist voluntary action in the implementation of projects for the enhancement of rural prosperity, strengthen and promote voluntary efforts in rural development with focus on injecting new technological inputs, act as the national nodal point for co-ordination of all efforts at generation and dissemination of technologies relevant to rural development in its wide sense and assist and promote programmes aimed at conservation of the environment and natural resources.

However, various ministries in the central government are engaged directly or indirectly for implementation of many programmes and schemes for the development of rural areas like Ministries of Agriculture, Health and Family Welfare, New and Renewable Energy, Science and Technology, Women and Child Development and Tribal affairs etc. In addition, to strengthen the grass root level democracy, the Government is constantly endeavouring to empower Panchayat Raj Institutions in terms of functions, powers and finance. Grama Sabha, NGOs, Self-Help Groups and PRIs have been accorded adequate roles to make participatory democracy meaningful and effective.

The various strategies and programs of the Government for rural development are discussed below:

#### **Integrated Rural Development Program :-**

IRDP has provided assistance to rural poor in the form of subsidy and bank credit for productive employment opportunities through successive plan periods. Subsequently, Training of Rural Youth for Self Employment (TRYSEM), Development of Women and Children in Rural Areas (DWCRA), Supply of Improved Tool Kits to Rural Artisans (SITRA) and Ganga Kalyan Yojana (GKY) were introduced as sub-programs of IRDP to take care of the specific needs of the rural population.

**Wage Employment Programs :-** Anti-poverty strategies, like assistance to the rural poor families to bring them above the poverty line by ensuring appreciable sustained level of income through the process of social mobilization, training and capacity building.

**Employment Assurance Scheme :-** The EAS was designed to provide employment in the form of manual work in the lean agricultural season. The works taken up under the program were expected to lead to the creation of durable economic and social infrastructure and address the felt-needs of the people.

**Rural Housing :-** Initiated in 1985-86, the IAY is the core program for providing free housing to families in rural areas. The Housing and Urban Development Corporation (HUDCO) has extended its activities to the rural areas, providing loans at a

concessional rate of interest to economically weaker sections and low-income group households for construction of houses.

**Food for Work Program :-** The Food for Work program was started in 2000-01 as a component of the EAS in eight notified drought-affected states

**Social Security Programs :-** The National Social Assistance Program (NSAP), launched in August 1995 marks a significant step towards fulfillment of the Directive Principles of State Policy. The NSAP has three components: a) National Old Age Pension Scheme (NOAPS); b) National Family Benefit Scheme (NFBS); c) National Maternity Benefit Scheme (NMBS). The NSAP is a centrally-sponsored program that aims at ensuring a minimum national standard of social assistance over and above the assistance that states provide from their own resources. The NOAPS provides a monthly pension of Rs. 75 to destitute BPL persons above the age of 65. The NFBS is a scheme for BPL families who are given Rs. 10,000 in the event of the death of the breadwinner.

**Land Reforms :-** The government has strived to change the ownership pattern of cultivable land, the abolition of intermediaries, the abolition of zamindari, ceiling laws, security of tenure to tenants, consolidation of land holdings and banning of tenancy are a few measures undertaken.

Despite these developments, there is a wide gap between rural and urban India with respect to technology, living condition, economic empowerment etc. Many in rural India lack access to education, nutrition, health care, sanitation, land and other assets and they are trapped into poverty. In rural India there is high number of Infant Mortality with low Life Expectancy at Birth Rate. Rural India mostly depends on agricultural sector. The growth rate in agricultural sector (primary sector) is 2-3% when compared to secondary and tertiary sector which are growing at the rate of 8-12%. Due to this there is a large scale migration of labour forces from rural to urban in search of employment. 8-12% growth rate in the secondary and tertiary sector help Urban India as an emerging global information based economy still urbanization of poverty is a major concern.

Apart from taking steps to increase human development facilities in the villages, such as health and education, and develop appropriate infrastructure such as roads and marketing facilities, there is the need for generating employment, which can better the living conditions of villagers. We need to adopt a long-term policy, keeping in mind the requirements of the rural and urban areas. A close look at the development plan exercises tends to demonstrate that ad-hocism permeates the policy processes. In the rural areas there are many resources lying unutilized. It is time to identify these and make proper use of them. The application of Information Technology can be of great help in identifying what is lying unutilised or underutilised.

#### References :-

- Das, S. K. and A. Barua (1996). Regional Inequalities, Economic Growth and Liberalisation: A Study of the Indian Economy. *The Journal of Development Studies*, XXXII (3): 364 - 90.
- Das, S. K., A. Barua and M. N. Ghosh (1993). *Inter-State Economic Inequality in India: Some Implications for Development Strategy*. Discussion Paper, International Trade and Development, New Delhi: Jawaharlal Nehru University.
- Dev, Mahendra S. (1988). Regional Disparities in Agricultural Productivity and Rural Poverty in India. *Indian Economic Review*, XXIII (2): 168 - 205.
- Alagh, Yoginder K. (1980). Regional Disparities in Rates of Growth and Productivity in Indian Agriculture: Causes and Remedies. *Anvesak*, X (1): 1 - 28.
- Bharadwaj, Krishna (1982). Regional Differentiation in India: A Note. *Economic and Political Weekly*, XVII (14-15-16): 605 - 14.
- Chattopadhyay, Manabendu, Robin Mukherjee and Ashok Rudra (1990). Disparities in Income and Levels of Living. *Economic and Political Weekly*, XXV(15):78



## Bio-Diversity of Littoral Benthic Macro-Invertebrates and Water Quality Assessment of Narmada River

Khichi Yogesh

Head of the P.G.Department of Zoology, Umiya Girls College Rau Indore, M.P., INDIA

**Abstract** : River Narmada is one of the 13 prominent rivers of India, which covers 98,797 sq km of total water-shed area. Narmada is considered to be the lifeline of Madhya Pradesh and most important west flowing river of India. The monitoring of water quality of Narmada River was carried out for One year August 2011 to July 2012. Barwani sampling stations were selected at downstream of Narmada River. The water samples collected were analyzed, as per standard methods parameters such as pH, Turbidity were measured in-situ. Raised values of physico-chemical parameters indicate the pollution of riverine ecosystem due to domestic wastes, municipal sewage, industrial effluent from Security Paper Mill (SPM) and agricultural run-off that influence the water quality directly or indirectly. Statistical analysis carried out through correlation method and also evaluates Average values (AV), Standard Deviation (SD), Standard Variance (SV), Standard Error (SE) and 95% Confidence Limit (CL) to assess the pollution load assessment. The results revealed that most of the water samples were below or out of limited; according to the WHO, BIS standards.

**Key Words** : Statistical analysis, Narmada river, Water pollution, River water quality, Barwani, Physico- chemical analysis.

**Introduction** : Macro-invertebrates are most frequently used in bio-monitoring studies because the responses of macro-invertebrates to organic and inorganic pollution have been extensively documented (Thorne., Williams., 1997 ; Kazanci., Dugal., 2000 . They have sensitive life stages that respond to stress and integrate effects of both short-term and long-term environmental stressors (EPA., 1998) and they are important areas for maintaining biodiversity (Meyer et al., 2007;

Richardson., Danehy., 2007). The study of benthic macro-invertebrates provides a method to determine the water quality of a stream based on collection and identification of stream-bottom (benthic) macro-invertebrates. This study has been done to water quality assessment using benthic macro-invertebrates. Benthic study in Malwa region of Madhya Pradesh is scarce except that of Govindan K., Kashinathan R., Desai BN., 1976 , Rao KS et al., 1985 , Sunny A., Diwan AP., 1991 Sharma S., and Barkale S 2016 , Sharma S et al., 2007 , Khichi Y and Sharma S., 2017. The main purpose of this study is to assess the water quality of Narmada river and to suggest the conservative measures to increase the quality of the river.

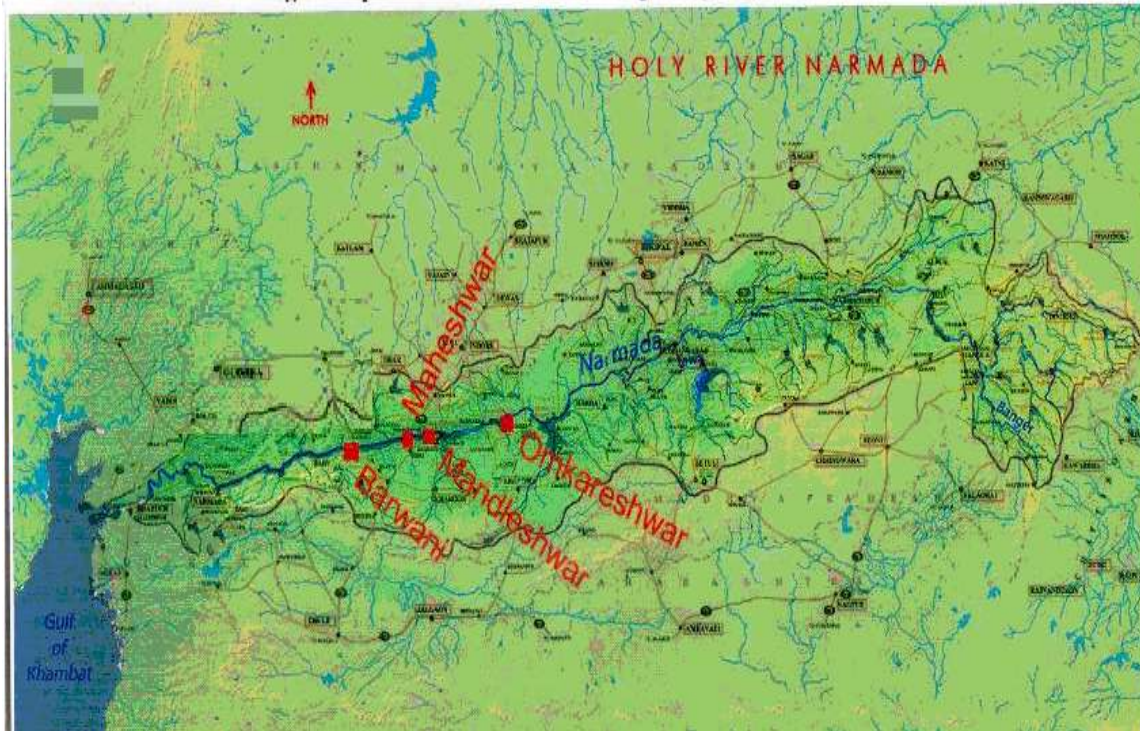
**Materials and Methods** : Description of Study Area: The Narmada river is considered as the life line of Madhya Pradesh. The catchment area of the river exists in the States of Madhya Pradesh (86.18%), Gujarat (11.6%), Maharashtra (1.5%), and Chattisgarh (0.72%). During its course, the river drops from an elevation of 1051 m to sea level, and flows through narrow gorges in the head reaches. The basin is bounded on the north by the Vindhya ranges, on the east by the Maikal range, on the south by the Satpura ranges and on the west by the Arabian Sea. Deep black soil covers the major portion of the basin. The river has 41 tributaries, of which 22 are on the left bank and 19 are on the right bank. The Barna, Tawa, Kolar, and Sukta dams have been constructed on the tributaries. The Bargi is constructed on the mainstream, while the Indirasagar, Omkareshwar, Maheshwar and Sardar Sarovar dams are under construction.

**Sampling stations Barwani** : Barwani, also known as Siddh Nagar, is an important city and a municipality in Barwani district in the state of Madhya Pradesh, India. The place is also famous

for chool giri, Jain pilgrimage center of Bawangaja. The town is situated near the left bank of the

Narmada river. Latitude (DMS) 22° 10', 60"N and Longitude (DMS) 74° 54', 0 " E.

Fig 1. Map of Narmada river showing Sampling Stations



**Physico chemical analysis of water :** The water samples were collected from the sampling station Barwani ,for the period of 12 months from August 2011 to July 2012. In the analysis of the Physico-chemical properties of water, standard methods prescribed in limnological literature were used. Parameters like Temperature, pH and Turbidity were determined at the site, while other parameters like Biochemical oxygen demand, Chloride, Alkalinity, total Solids were determined in the laboratory. The Physico-

Chemical parameters of water were determined as per standard methods of APHA (2005), Welch (1998), Golterman (1991).

**Results and Discussion**

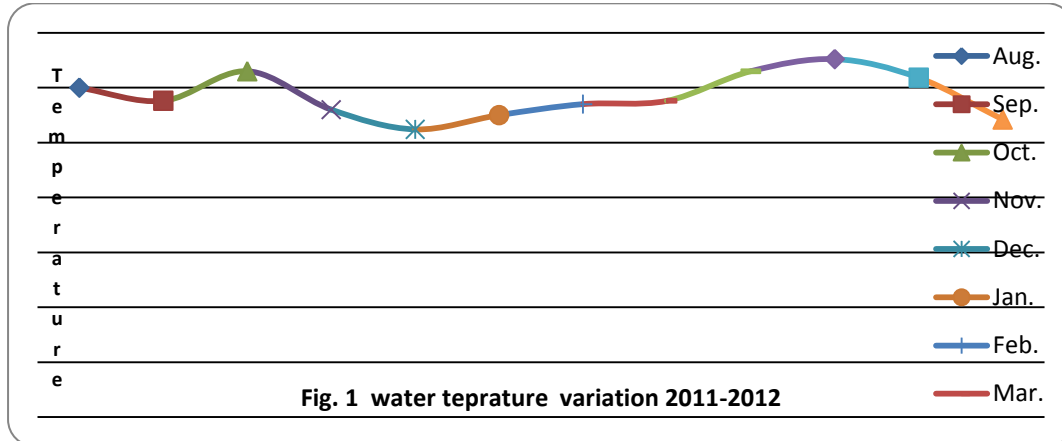
**Water Temperature :** The oxidation of organic matter is highly influenced by the temperature of water. Temperature of river water depends upon the season, climatic zone, where river is flowing, time of sampling and also upon the temperature of the effluents, which are being added in the river. Temperature fluctuation during August 2011 to July 2012 was as follows table no.1.

**TABLE-01: MONTHLY FLUCTUATION IN WATER TEMPERATURE (°C) OF NARMADA RIVER FROM AUGUST 2011 TO JULY 2012 AT BARWANI.**

Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Avr.	Standard deviation
30	28.8	31.5	28	26.2	27.5	28.5	28.8	31.5	32.6	30.9	27.10	27.85	1.91

The minimum water temperature was 26.2°C in December 2012 and the maximum was reported 32.6°C in May 2012 at Barwani. The same observation were also reported by R.Bhutaiani et al (2016), Sharma et al (2011) and Shraddha et al (2008) in Narmada river, while studying the

hydrological parameters of Narmada river at Hoshangabad recorded water temperature between 27.6°C to 38.4°C.



**pH Range :** pH is an important parameter which is important in evaluation the acid base balance of water. Natural waters generally have been found to range from 5.5 to 8.6 because of the presence

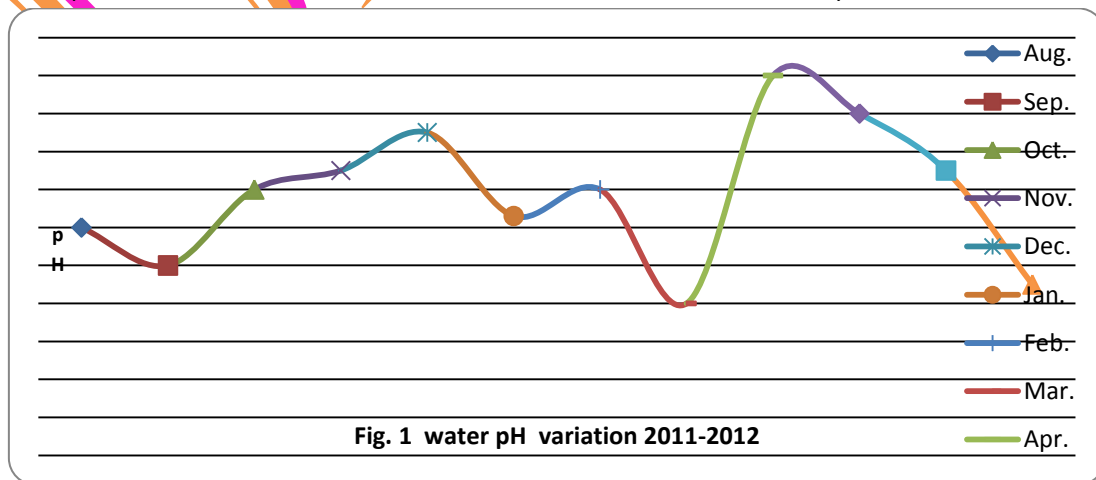
of bicarbonates and carbonates of alkaline earth metals. Drinking water with a pH range from 6.5 to 8.3 has been necessary. During August 2011 to July 2012 the pH was fluctuated as follows table 2.

**TABLE-02: MONTHLY FLUCTUATION IN WATER pH OF NARMADA RIVER FROM AUGUST 2011 TO JULY 2012 AT BARWANI.**

Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Avr.	Standard deviation
8.2	8	8.4	8.5	8.7	8.26	8.4	7.8	9	8.8	8.5	7.9	8.37	0.34

The minimum in March 2012 and the maximum in May 2012 at Barwani. Sharma et al (2011) observed pH fluctuation between 7.6 to 9.9 in

Hoshangabad area of Narmada river. Prasanna and Ranjan (2010) observed pH value between 7.5 to 8.5 in Dharma estuary.



**Transparency.** : Transparency of the surface water is often an important limiting factor in the development and distribution of plant and animal life in fresh waters. This is most important significance of transparency monitoring and

therefore it has been an indication of effectiveness of filtration of water supplies (Hauser 2001). During August 2011 to July 2012 transparency was fluctuated as follows table 3.

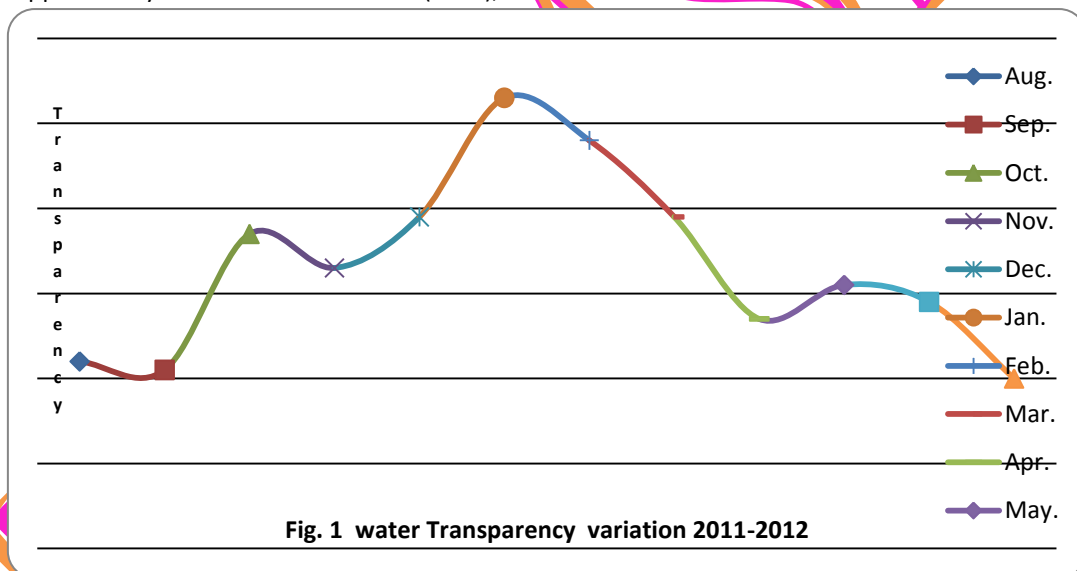
**TABLE-03: MONTHLY FLUCTUATION IN WATER Transparency mg/l**

**OF NARMADA RIVER FROM AUGUST 2011 TO JULY 2012 AT BARWANI.**

Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Avr.	Standard deviation
22	21	37	33	39	<b>53</b>	48	39	27	31	29	<b>20</b>	33.1	10.56

The minimum in July 2012 and maximum in January 2012 at Barwani. These observations were also supported by Prasanna and Panda (2010),

Shraddha et al (2008) Tiwari, M and Dwivedi, A(2016) and Trivedi et al (2009).



**Fig. 1 water Transparency variation 2011-2012**

**Total dissolved solid :** The total solids are the total amount of chemical substance present in the water. The total dissolved solids and total suspended solids together make the total solids in the water. The presence of solids in water vary

greatly at different times and affect the density of water and there by the quality of aquatic environment. During August 2011 to July 2012 the value of total solids varied as follows table 4.

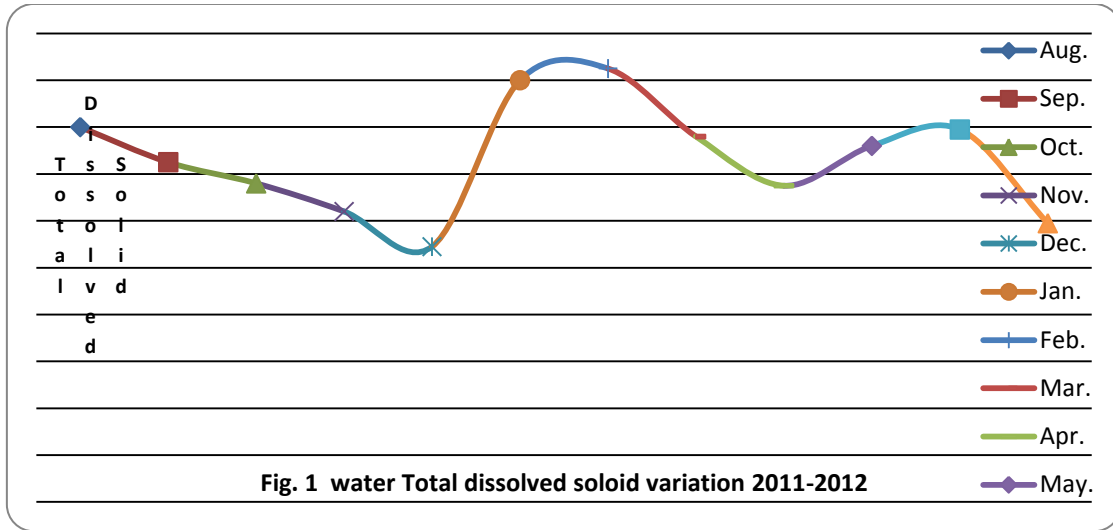
**TABLE-04: MONTHLY FLUCTUATION IN WATER Total Dissolved Solid mg/l**

**OF NARMADA RIVER FROM AUGUST 2011 TO JULY 2012 AT BARWANI.**

Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Avr.	Standard deviation
160	145	136	124	<b>109</b>	180	<b>185</b>	156	135	152	159	119	146.6	22.31

The minimum value was recorded in December 2011 and maximum in February 2012 at Barwani .  
 Nduka et al (2008) also recorded total solids

between 100 to 220 mg/l in Niger delta of Nigeria and Khanna, D.R, and Rawat, S., Bhutiani ,R.,(2014).



**Alkalinity** : Alkalinity measures the buffering capacity of water and content of CO<sub>2</sub> in its various forms are involved in this carbonate-bicarbonate carbonic acid buffering system. In the present

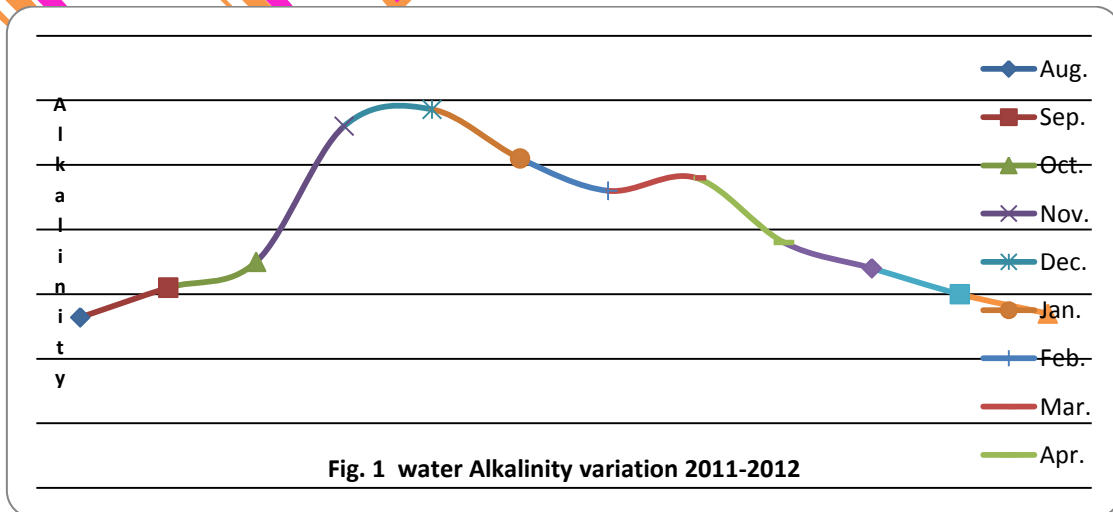
study the value of Alkalinity varied as follows table 5.

**TABLE-05: MONTHLY FLUCTUATION IN WATER Alkalinity OF NARMADA RIVER FROM AUGUST 2011 TO JULY 2012 AT BARWANI.**

Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Avr.	Standard deviation
132	155	175	280	293	255	230	240	190	170	150	135	146.6	22.31

The minimum value in August 2011 and maximum in December 2011 at Barwani. Trivedi et al (2009) recorded alkalinity value between 13 to 246mg/l in

Ganga river India. Singh et al (2010) observed alkalinity value between 54 to 168mg/l while studying on Manipur river.



**Biochemical Oxygen Demand** : Biochemical oxygen demand is the amount of oxygen utilized by microorganism in stabilizing the organic matter in aerobic condition. DO measurement

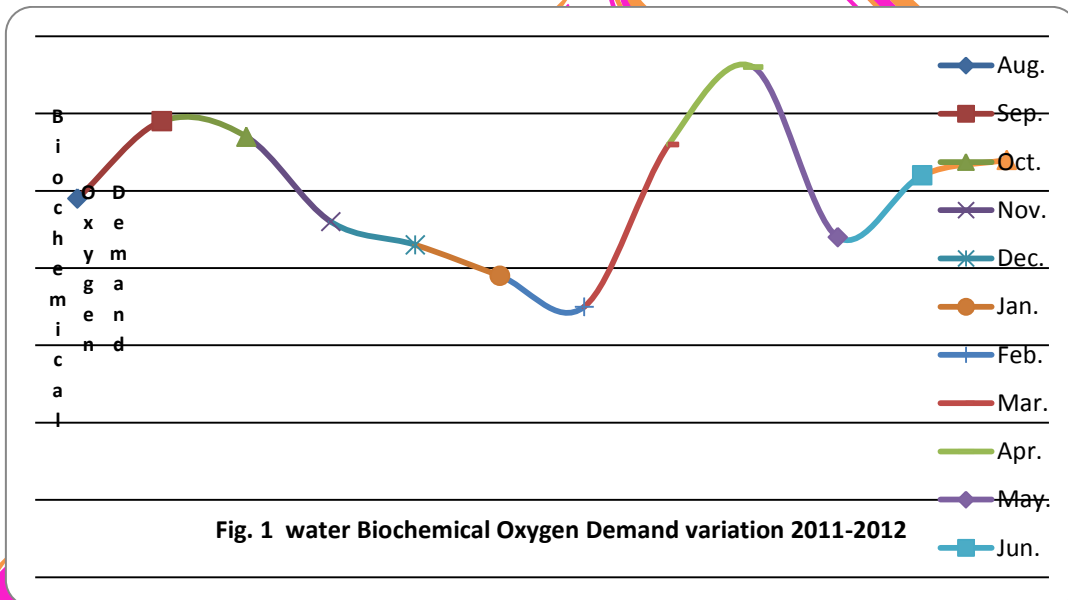
forms the basis of BOD analysis. It gives an indication of load of biodegradable organic material present in the water body. During the present study the BOD was fluctuated as follows table 6.

**TABLE-06: MONTHLY FLUCTUATION IN WATER Biochemical oxygen demand mg/l OF NARMADA RIVER FROM AUGUST 2011 TO JULY 2012 AT BARWANI.**

Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Avr.	Standard deviation
4.9	5.9	5.7	4.6	4.3	3.9	3.5	5.6	6.6	4.4	5.2	5.4	5	0.86

The minimum BOD was recorded February 2012 and maximum in April 2012 at Barwani. Same

observations were also recorded by Nnaji et al (2010) Katakwar, M (2014) and Mary et al (2008).



**Conclusion** : Bio monitoring is good tool for the assessment of water body. It needs no chemicals means ecofriendly, cost effective and moderately accurate. And this study also help in studying aquatic benthic macro- invertebrates.

**Recommendation**

1. A continuous monitoring of the physico-chemical, biological, and microbiological parameters of this river is needed for in -situ conservation of aquatic biodiversity.
2. A definite impact on the water mass for increase in the development of submerged saprophytes

and aquatic weeds which promote eutrophication must be prevented by taking advance precaution in this record.

**References :**

1. Akhand ., A and Srivastava, S. (2015): Seasonal biological water quality assessment of river Kshipra using benthic macro invertebrates Ujjain (M.P). Social Issues and Environmental Problems, Vol.(4),342-350. ISSN-2350-0530.
- 2.Allan, J.and Flecker, A. (1993); Biodiversity conservation in running waters. Bioscience, Vol.43,

No.1, (January 1993), pp. 32-43, ISSN 0006-3568.\*

3.APHA (2005): Standard method for examination of water and waste water, American Public Health Association Inc. New York 22<sup>nd</sup>Ed.

4.Gazetteer of Hoshangabad, (1979); Govt. of India, Madhya Pradesh.

5.Govindan K, Kashinathan R, Desai BN. Macro benthic fauna in the polluted Thane creek & Bombay Harbour.Journal of the Indian Fisheries Association.1976; 6:127-139.

6.Kazanci N, Dugel M.Ordination and classification of macro-invertebrates and environmental data of stream in Turkey. Water Science and Technology., 2000;47: 7-8.

7.Katakwar, M (2014): Water quality and pollution status of Narmada river Anjan tributary in (M.P). Inter National journal of Current Research and Academic Review . 2(11) 93-98.

8.Khanna, D.R, and Rawat, S., Bhutiani ,R.,(2014).Recent trend in physico-chemical parameters of Song river at Nepali farm district Dehradun,Uttarakhand, Journal of Research and Bioscience, Vol.(2) 33-44pp.

9.Khichi Yogesh (2017): Physico-chemical Evaluation of Water quality of Narmada river from omkareshwar to barwani,MP,India.Journal of Natural and applied science. Volume (4) Pp319-327.Issn:2349-4077.

10.Kumar et al (2017):Phyco-chemical analysis of surface and ground water in selected sites of Dehradun,Uttarakhand, India. Journal of Environmental Analysis and Toxicology.10.4172/2161-0525.

11.Mary H. P. A., S. Jayasree, J. A. Johnson, B. J. Edith and I.H. Chittarasu (2010) Seasonal variations In physico-chemical parameters of water in coconut husk retting area, Parakkani, Tamil Nadu. Inter National J. of env. Sciences 1(6). 1056-1061.

12. Meyer JL et al.The contribution of headwater streams to biodiversity in river networks. Journal of the American Water Resources Association.,2007;43:86-103.

13.Nduka J. K., O. E. Orisakwe and L. O. Ezenweke (2008) Some physico-chemical parameters of potable water supply in Warri, Niger Delta area of Nigeria. Scientific Research and Essay, 3 (11), pp. 547-551.

14.Nnaji J.C., A. Uzairu, G.F.S. Harrison and M.L. Balarabe (2010) Effect of Pollution on the Physico-chemical Parameters of Water and Sediments of River Galma, Zaria, Nigeria.Libyan Agriculture Research Center, 1 (2). pp 115-122.

15.Prasanna M. P. and P. C. Ranjan (2010) Physico-chemical properties of water collected from Dhamra estuary. Inter National Journal of environmental Sciences 1(3) pp- 334-342.

16.Richter, B. Braun, D.; Mendelson, M. & Master L. (1997); Threats to imperiled freshwater fauna. Conservation Biology, Vol.11, No. 5, (October 1997), pp.1081-1093, ISSN08888892.

17.R.Bhutaiani et al (2016): Quality assessment of Ganga river at haridwar with references to various physico-chemical parameters.Biotechnology Society 9(1):17-24.

18.Rao KS et al. Community structure of benthic macro-invertebrates and their utility as indicators of pollution in river Khan (Indore), India. Proceeding of National Symposium Pure and Applied Limnology. 1985; 32:114-119.

19.Richardson JS, Danehy RJ. Asynthesis of ecology of head water stream and their riparain zones in temperate forests. 2007.

20.Sharma K. K., S. Chowdhary and A. Sharma (2010) Malaco fauna diversity of river Chenab fed stream (Gho-Manhasan), The Bioscan 6(2) pp 267-269.

21.Sharma S., V. Rakesh, D. Savita and J. Praveen (2011). Evaluation of water quality of Narmada river with reference to physico-chemical parameters at Hoshangabad city, MP, India. Research Journal of Chemical.Science. 1(3) pp 40-48.

22.Sharma S and Barkale S(2016):The species richness and abundance of macro-invertebrates in Bilawali Talab Indore (M.P.),India. International journal of fisheries and aquatic studies: 4 (5): 311-315, ISSN: 2347-5129.

23. Shradha S., D. Savita, J. Praveen, K. W. Shah, R. Vishwakarma (2008) Statistical evaluation of hydrological parameters of Narmada river water at Hoshangabad city, India. *Environ Monit Assess.*143: 195-202.
24. Sharma S, Joshi V, Kurde S, Sighavi M. Bio-diversity of benthic macro-invertebrates and fish species communities of krishnapura lake, Indore, M.P. *Aquatic Biology.* 2007; 22(1):1-4.
25. Strayer D, Dudgeon D. (2010); Freshwater biodiversity conservation: recent progress and future challenges. *Journal of the North American Benthological Society.*29:344–358.
26. Sunny A, Vattakeril, Diwan AP. Community structure of benthic macro-invertebrates & their utility as indicators of pollution in river Kshipra, India. *Journal. Pollution Research.* 1991; 10:1-11.
27. Thorne RS, William WP. The response of benthic macro-invertebrates to pollution in developing countries. A multimetric system of bioassessment. *Fresh water Biology.*1997;37: 671-686.
28. Trivedi P., A. Bajpai and S. Thareja (2009) Evaluation of water quality: Physico-chemical characteristics of Ganga river at Kanpur by using .
29. Tiwari, M and Dwivedi, A(2016); Suitability analysis of water in an urban tropical lake using seasonal water quality index. *Biology and Medicine Vol.(2)* 83-87.